

# **EXHIBIT 70**

## **Redacted Expert Report of Dr. Hal J. Singer**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEVADA**

IN RE:	)	Case No.: 2:15-cv-01045-RFB-(PAL)
	)	
Cung Le, Nathan Quarry, Jon Fitch, Brandon Vera,	)	CLASS ACTION
Luis Javier Vazquez, and Kyle Kingsbury,	)	
on behalf of themselves and all others similarly	)	
situated,	)	
	)	
Plaintiffs,	)	
	)	
vs.	)	
	)	<b>EXPERT REPORT OF</b>
Zuffa, LLC, d/b/a Ultimate Fighting Championship	)	
and UFC,	)	<b>HAL J. SINGER, PH.D.</b>
	)	
Defendant.	)	

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## INTRODUCTION AND ASSIGNMENT

1. Zuffa LLC, doing business as Ultimate Fighting Championship (“Defendant,” “Zuffa,” or “UFC”), is a promoter of live professional mixed-martial-arts (“MMA”) bouts. Plaintiffs in this case are MMA fighters (“Fighters”), and include Cung Le, Nathan Quarry, Jon Fitch, Brandon Vera, Luis Javier Vazquez, and Kyle Kingsbury.<sup>1</sup> Plaintiffs allege that Defendant implemented an anticompetitive scheme to acquire, maintain, and enhance its monopoly power in

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1. I interviewed named plaintiffs Cung Le, Nate Quarry, and Javier Vazquez on May 23, 2017. On June 2, 2017, I interviewed named plaintiffs Jon Fitch and Kyle Kingsbury.

the market for promoting professional MMA bouts (the “Relevant Output Market”), and its monopsony power over the Fighters appearing in those bouts (the “Relevant Input Market”).<sup>2</sup> I have measured the Relevant Input Market using two industry-accepted databases: (1) MMA Fighters who are tracked by FightMetrics (the “Tracked” Relevant Input Market); and (2) MMA Fighters who are ranked by FightMatrix (the “Ranked” Relevant Input Market). I also have defined a relevant input submarket consisting of all Fighters ranked one through fifteen in any of the major MMA weight classes (the “Relevant Input Submarket,” or “Headliners”), using industry-accepted databases for ranking MMA Fighters.

2. Plaintiffs allege that Zuffa’s anticompetitive scheme has foreclosed potential rival MMA promoters and impaired their ability to compete with Zuffa in the promotion of professional live MMA Events (“Live MMA Events”). Specifically, Zuffa is alleged to have: (1) eliminated potential rival MMA promoters through horizontal acquisitions; (2) deprived potential rivals of key inputs (the Fighters themselves) by entering into allegedly exclusionary contracts with the vast majority of top Fighters; and, (3) taken other steps to use its alleged dominance to impair potential rivals.<sup>3</sup> Plaintiffs allege that these actions, taken together (the “Challenged Conduct”), have enabled Zuffa to harm competition in the Relevant Output and Input Markets,<sup>4</sup> thereby maintaining and enhancing Zuffa’s monopoly and monopsony power, causing anticompetitive effects, and resulting in antitrust injury to Plaintiffs and members of the two classes defined below.<sup>5</sup>

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2. United States District Court District of Nevada, *Cung Le, et al. v. Zuffa, LLC, d/b/a Ultimate Fighting Championship and UFC*, 2:15-cv-01045-RFB-(PAL), Consolidated and Amended Antitrust Class Action Complaint (Dec. 18, 2015) [hereafter, CAC].

3. *Id.* ¶1; Part VII.A.

4. *Id.* Part VII.B.

5. *Id.* Parts VII.C-VII.D.

3. Plaintiffs have defined a “Bout Class” as:

All persons who competed in one or more live professional UFC-promoted MMA bouts taking place or broadcast in the United States during the Class Period. The Bout Class excludes all persons who are not residents or citizens of the United States unless the UFC paid such persons for competing in a bout fought in the United States.<sup>6</sup>

Plaintiffs have defined the “Identity Class” as:

Each and every UFC Fighter whose Identity was expropriated or exploited by the UFC, including in UFC Licensed Merchandise and/or UFC Promotional Materials, during the Class Period in the United States.<sup>7</sup>

Plaintiffs define the “Identity of a UFC Fighter” as “the name, sobriquet [nickname], voice, persona, signature, likeness and/or biographical information of a UFC Fighter.”<sup>8</sup> Plaintiffs have defined the “Class Period” as beginning December 16, 2010, and continuing until the Challenged Conduct ceases.<sup>9</sup> Plaintiffs claim that through the Challenged Conduct, Zuffa has injured members

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6. *Id.* ¶39. I have been instructed by Class Counsel to interpret the phrase “a bout fought in the United States,” as used in the Bout Class definition, to mean any fight taking place within the United States or broadcast live (with or without a tape delay) into the United States. Given that all of the bouts in the data I am using to assess foreclosure, impact, and damages either took place within the United States or were broadcast live in the United States (albeit some with slight tape delay), I did not need to exclude any fighter from the Bout Class, nor did I need to remove data reflecting any potential non-qualifying bouts in assessing impact or damages. If, however, the class definition were interpreted to be limited only to those class members who fought in a bout that physically took place within the United States during the Class Period (regardless of whether or not it was broadcast live into the United States), 12.7 percent of the Bout Class members would be excluded (154 out of 1,214 Fighters). These 154 Fighters account for 1.5 percent of the aggregate Bout Class damages. Additionally, 33.1 percent of all Bout Class damages are associated with bouts fought outside the United States (but which were broadcast live into the United States).

7. *Id.* ¶47. Consistent with the definition of the Bout Class, I limit my analysis to Fighters participating in one or more Zuffa Live MMA Events broadcast in the United States during the Class Period. This includes numbered UFC pay-per-view events (for example, “UFC 196: McGregor vs. Diaz,”) as well as non-pay-per-view UFC events (for example, “FOX 7: Henderson vs. Melendez”). Events are considered live if broadcast either in real time or with a tape delay for events held in foreign time zones. (For example, UFC 138, held in the United Kingdom, was tape delayed for US audiences. See <http://www.mmaweekly.com/ufc-138-tv-ratings-match-past-tape-delays>). I do not include taped bouts from The Ultimate Fighter (“TUF”), Zuffa’s reality-TV show; however, TUF finales, which are live, are included (for example, “TUF 21 Finale: Thompson vs. Ellenberger”). Finally, Live MMA Events by acquired promoters (such as Strikeforce), in which Fighters received compensation from Zuffa, are also included. See ZFL-2603701

8. CAC ¶27.

9. *Id.* I understand Plaintiffs claim that the Challenged Conduct is ongoing.

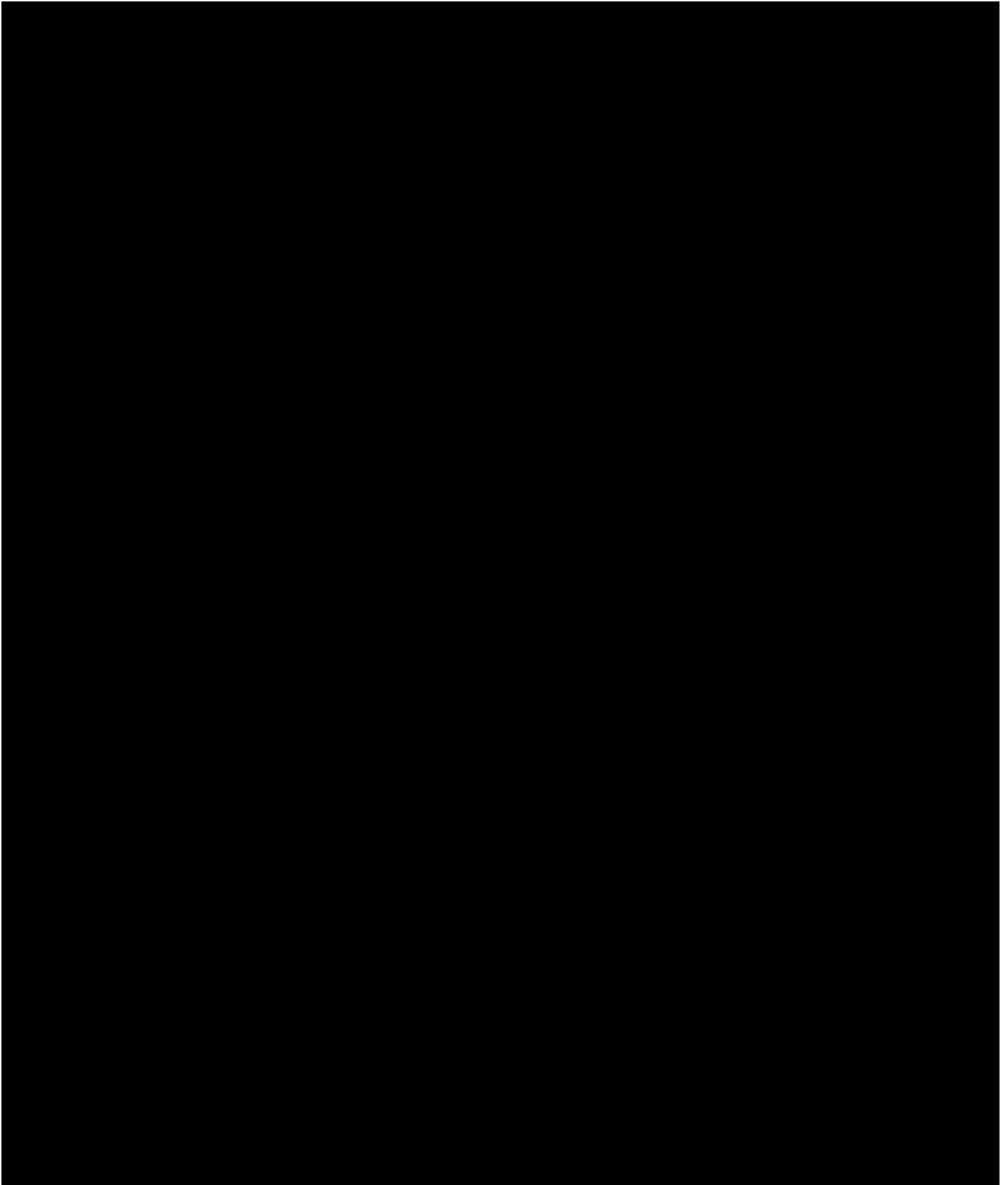
of the Bout and Identity Classes by compensating them for bouts and Identity rights, respectively, below levels that would have prevailed in the absence of the Challenged Conduct.<sup>10</sup>

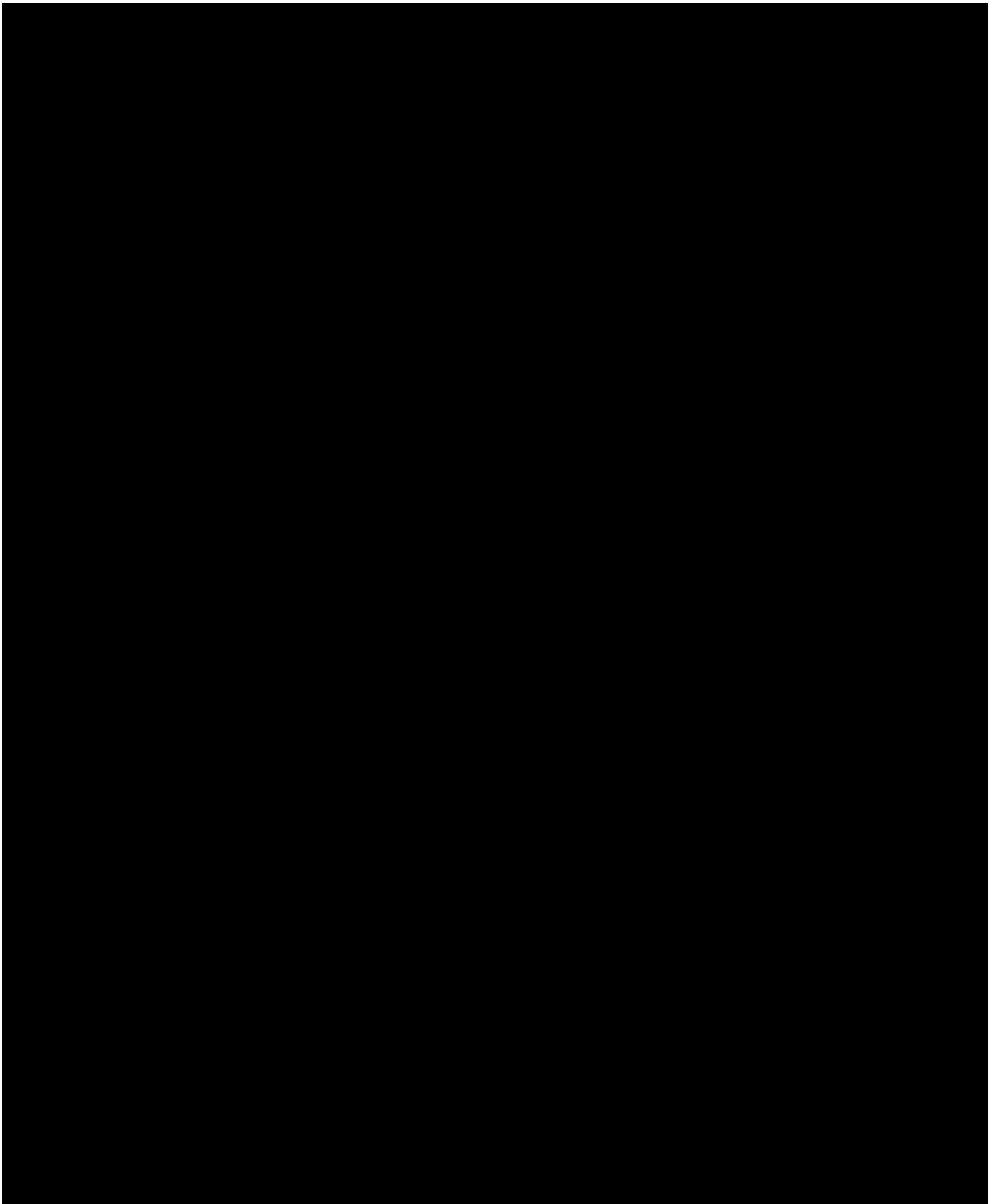
4. I have been asked by counsel for Plaintiffs to determine whether Zuffa possessed monopoly or monopsony power (or both), and, to the extent necessary or helpful to make such determinations, to define one or more relevant antitrust markets (along both product and geographic dimensions) for assessing the claims in this case. I have also been asked to assess whether the Challenged Conduct foreclosed competition and generated anticompetitive effects. I have also been asked to determine whether the Challenged Conduct: (1) caused members of each Class to be compensated below levels that would have prevailed in the absence of the Challenged Conduct; and (2) caused injury in the form of under-compensation that was widespread across members of each Class (that is, to assess whether the Challenged Conduct generated a “common impact” on each Class). Next, I have been asked to calculate the aggregate amount of undercompensation to members of each Class attributable to the Challenged Conduct. I was also asked to review and assess potential procompetitive justifications for the Challenged Conduct that Zuffa, or economists acting on its behalf, have asserted in other fora, including in proceedings before the Federal Trade Commission (FTC). Finally, for each prong of my analysis, I was asked to determine whether addressing it would involve methods and/or evidence common to Class Members (as opposed to evidence or methods that would vary from one Class Member to another).

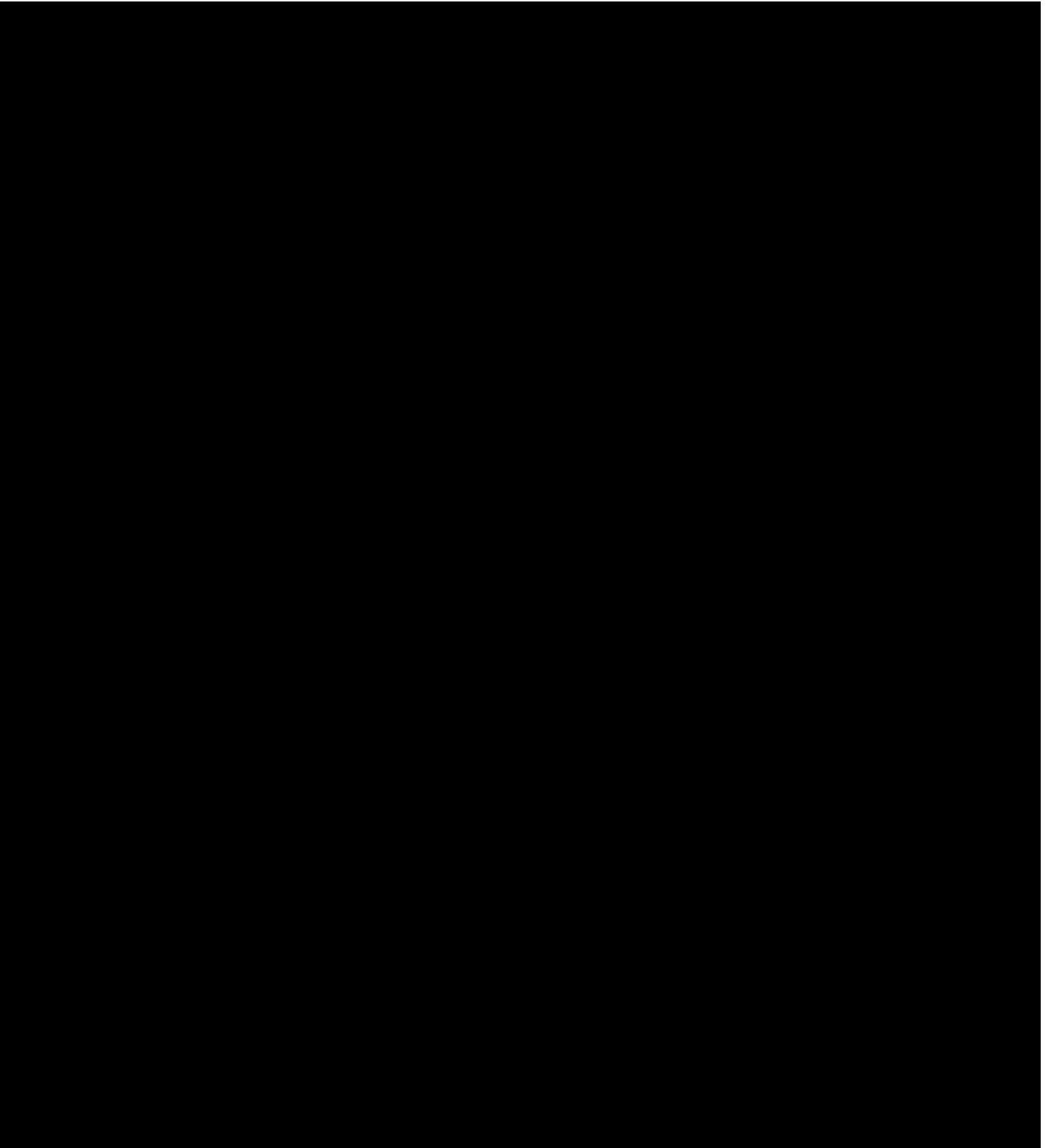
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10. *Id.* ¶21. I estimate that, as of June 30, 2017, there are 1,214 Fighters in the Bout Class and at least as many Fighters in the Identity Class. As explained in Part V, *infra*, my analysis of the Identity Class focuses on two subgroups. The first of these subgroups consists of Fighters who received positive, nonzero compensation from Zuffa in exchange for use of their Identities during the Class Period. There are at least 826 Fighters in this first subgroup. The second subgroup consists of Fighters who executed a Promotional and Ancillary Rights Agreement with Zuffa during the Class Period. There are at least 791 Fighters in this subgroup. There is substantial overlap between these two subgroups. Approximately 64 percent of the members of the first subgroup are also members of the second subgroup, and approximately 67 percent of the members of the second subgroup are also members of the first subgroup.

**SUMMARY OF CONCLUSIONS**







6. The remainder of my report is organized as follows: In Part I, I briefly review the MMA industry's background and the related academic literature. In Part II, I review the horizontal and vertical aspects of the Challenged Conduct. In Part III, I show with evidence common to

members of both Classes that Zuffa possessed significant market power, and I demonstrate with classwide evidence that the Challenged Conduct substantially foreclosed competition and generated anticompetitive effects. In Parts IV and V, I show, using classwide evidence, that the harm flowing from the Challenged Conduct was widespread across members of both proposed Classes and thus can be said to have caused common impact across each Class. In Part VI, I calculate, using classwide evidence and methods, aggregate damages to members of each Class. In Part VII, I review efficiency defenses of the Challenged Conduct that Zuffa has put forth in prior proceedings, and I explain (based on classwide evidence and analyses) why these claims do not undermine my findings.

7. The opinions expressed in this report reflect my review of evidence, data, testimony and other relevant materials to date. I reserve the right to supplement or amend my opinions should new materials or information become available.

#### QUALIFICATIONS

8. I am a Principal at Economists Incorporated, a Senior Fellow at George Washington University's Institute for Public Policy, and I have served as an Adjunct Professor at Georgetown University's McDonough School of Business (where I have taught Advanced Pricing to MBA candidates).

9. Prior to joining Economists Incorporated, I was a Managing Partner at Navigant Economics, and before that, I was Chief Executive Officer of Empiris, a litigation and regulatory consulting firm (acquired by Navigant in 2010).

10. I am the co-author of the e-book *The Need for Speed* (Brookings Press 2013), and the book *Broadband in Europe* (Springer Press 2005). My articles, several of which pertain to

exclusive dealing,<sup>14</sup> have appeared in dozens of legal and economic journals, as well as economic textbooks.

11. I have testified before Congress on the interplay between antitrust and sector-specific regulation. My scholarship and testimony have been widely cited by courts and regulatory agencies. In agency reports and orders, my writings have been cited by the Federal Communications Commission, the Federal Trade Commission, and the Department of Justice. I served as an economic consultant to the Canadian Competition Bureau in a review of vertical merger in the television industry. My economic practice has been recognized by the American Antitrust Institute, and I have been a frequent speaker and author for ABA Antitrust Section events and publications, respectively.

12. Although my experience spans several industries, I have considerable experience in sports. I served as a testifying expert in three program-carriage cases (adjudicated by an Administrative Law Judge pursuant to section 616 of the Cable Act) on behalf of independent cable sports networks: MASN (the network of the Baltimore Orioles and Washington Nationals), NFL Network, and Tennis Channel. I also served as an expert for the National Football League in the sports-blackout-rule proceeding at the Federal Communications Commission. I have served (and continue to serve) as a valuation expert for the Baltimore Orioles in their ongoing revenue-division dispute with the Washington Nationals, arbitrated by Major League Baseball.

13. I earned M.A. and Ph.D. degrees in economics from the Johns Hopkins University and a B.S. *magna cum laude* in economics from Tulane University.

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14. See, e.g., Kevin Caves, Chris Holt & Hal Singer, *Vertical Integration in Multichannel Television Markets: A Study of Regional Sports Networks*, 12(1) REV. NETWORK ECON. (2013); Kevin Caves & Hal Singer, *Assessing Bundled and Share-Based Loyalty Rebates: Application to the Pharmaceutical Industry*, 8(4) J. COMPETITION L. & ECON. (2012); Kevin Caves & Hal Singer, *Analyzing High-Tech Employee: The Dos and Don'ts of Proving (and Disproving) Classwide Antitrust Impact in Wage Suppression Cases*, ANTITRUST SOURCE (2015).

14. My curriculum vitae is provided in Appendix 1. I have no financial stake in the outcome of this case. I am being compensated for my work in this case at the rate of \$695 per hour. A list of the materials upon which I relied in forming my opinions for this report is provided in the Appendix.

## I. INDUSTRY BACKGROUND

15. In this section, I provide a brief summary of the MMA industry, the related academic literature, and the forms of compensation that Class Members receive from Zuffa.

### A. The MMA Industry

16. MMA is a term for the modern-day, full-contact competitive sport that mimics unarmed combat between two individual Fighters. MMA blends different combat styles, incorporating the most effective striking, wrestling, and disabling maneuvers from other stand-alone martial arts such as boxing, kickboxing, judo, and wrestling, into a single contest of physical supremacy. With its origins in the “no-holds-barred” scoreless competition of fighting until unconsciousness or submission, MMA has since evolved from a spectacle of “human cockfighting”<sup>15</sup> into a popular competitive sport with its own rules and scoring systems.<sup>16</sup>

17. Similar in many ways to boxing, modern MMA fights (or “bouts”) between competitors are timed rounds in which opponents attempt to disable their opponents. A bout can be won by either knocking out an opponent via striking the head, or by forcing the opponent to submit (“tap out”) via a wrestling hold or lock that causes extreme pain. In the event neither Fighter has

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15. Robert J. Szczerba, *Mixed Martial Arts and the Evolution of John McCain*, FORBES, Apr. 3, 2014, available at <http://www.forbes.com/sites/robertszczerba/2014/04/03/mixed-martial-arts-and-the-evolution-of-john-mccain/#27d42ac91a3b>.

16. Trevor Collier, Andrew L. Johnson & John Ruggiero, *Aggression in Mixed Martial Arts: An Analysis of the Likelihood of Winning a Decision*, in VIOLENCE AND AGGRESSION IN SPORTING CONTESTS: ECONOMICS, HISTORY AND POLICY SPORTS ECONOMICS, MANAGEMENT AND POLICY 4 (R. Todd Jewell, ed. Springer Science + Business Media 2011) [hereafter *Aggression in MMA*].

capitulated by the end of the last round, the winner is determined by a scoring system employed by judges.<sup>17</sup> Today, Fighters are divided into ten major weight classes.<sup>18</sup> The top Fighter of each division is awarded a championship belt. In a title fight, a challenger is matched against the defending champion.<sup>19</sup> In boxing, while independent sanctioning organizations declare champions, boxers can unify a title (becoming an undisputed champion) by simultaneously capturing championships at all major sanctioning organizations.<sup>20</sup> In contrast, championships in MMA are promoter specific: The UFC awards championship belts to Fighters within its own organization, and there are no independent sanctioning organizations that declare champions or regulate the rules as to who is declared a champion. To date, the UFC has never cross-promoted a Live MMA Event in conjunction with another MMA promotion.<sup>21</sup> However, there exist third-party ranking systems, often relied upon by MMA promotions and the MMA press, that rank all MMA Fighters (across different MMA promoters) relative to one another, both within weight classes and on an overall “pound-for-pound” basis.<sup>22</sup>

18. State athletic commissions determine rules for Live MMA Events (weight divisions, fouls, equipment, etc.), and sanction each bout of a Live MMA Event individually.<sup>23</sup> Athletic

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17. See UFC’s “Ways to Win,” available at <http://www.ufc.com/discover/sport/ways-to-win>.

18. See, e.g., <http://mmajunkie.com/rankings> (showing the *USA Today/MMA Junkie* rankings for ten major weight classes, as well as men’s pound-for-pound rankings; see also UFC’s “Weight Classes,” available at <http://www.ufc.com/discover/sport/weight-classes>. See also <http://bleacherreport.com/articles/2652376-bleacher-report-mma-rankings-for-july-2016>

19. See, e.g., Jake Martin, *25 Greatest UFC Title Fights of All Time*, BLEACHER REPORT, Mar. 31, 2012, available at <http://bleacherreport.com/articles/1123311-25-greatest-ufc-title-fights-of-all-time>.

20. *Professional Boxing*, ENCARTA, June 5, 2008 (retrieved Nov. 14, 2008) (“If one fighter manages to capture the titles of all the major organizations at once, this is known as ‘unifying’ the title and the boxer is the ‘undisputed’ champion.”).

22. See, e.g., <http://www.fightmatrix.com/mma-ranks/>

23. See, e.g., <http://www.state.nj.us/lps/sacb/docs/martial.html>; see also Deposition of Joseph Silva (June 7, 2017), at 91:9-17.

commissions operate independently, sanctioning bouts under differing sets of criteria.<sup>24</sup> Generally, athletic commissions are primarily concerned with Fighter safety, considering factors such as matched Fighter's relative experience level and quality.<sup>25</sup> As of 2009, athletic commissions typically adopted the Unified Rules of Mixed Martial Arts when sanctioning events.<sup>26</sup>

19. Live MMA Events are produced by promoters such as the UFC, which plan and execute MMA bouts for commercial entertainment. Live MMA Events are multi-hour productions consisting of a series of bouts between pre-matched Fighters. Unlike in boxing, which frequently pits two boxers from competing promoters against each other, all participants in a given Live MMA Event are typically affiliated with the same promoter.<sup>27</sup> This series of bouts (the "Fight Card") occurs sequentially from the bottom, with the most anticipated fight of the night generally occurring last (the "Top of the Card").

24. Deposition of Joseph Silva at 86:12-19.

25. *Id.* at 87:8-23, 107:4-19, 121:17-122:16.

26. See <http://www.abcboxing.com/committee-report-on-unified-rules-for-mma>.

27. Deposition of Joseph Silva at 215:11-216:18.

28.

[REDACTED]

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[REDACTED]

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[REDACTED]

30. Deposition of Jon Fitch, February 15, 2017, at 112:7 – 112:9 (“Fighters fight for titles. The most coveted title is the UFC title.”).

31. *See* II.C.2, *infra*.

32. *See* Part I.C, *infra*.

33. *See* Part I.C, *infra*.

[REDACTED]

[REDACTED]

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23. The UFC was purchased by Lorenzo and Frank Fertitta for \$2 million in 2001, and was sold to William Morris Endeavor-International Management Group (“WME-IMG”) in August

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34. See Part II.B, *infra*.

35. [REDACTED] See also Hendrick 30(b)(6) V.I Tr. 264:8-10 (expressing Zuffa’s position that fighters are independent contractors); Silva Dep. 186:18-20.

36. Silva Dep. at 186:18-187:21.

[REDACTED]

38. ZUF-00401766 at 8.

39. See Zuffa’s Consolidated P&L Statements from 2001 – November 2015: ZFL-1674096, ZFL-1053223, ZFL-1472224, ZFL-1381761, ZFL-1514712, ZFL-1514713, ZFL-1514769, ZFL-1514770, ZFL-1514804, ZFL-1514836, ZFL-1514837, ZFL-1514870, ZFL-1514900, ZFL-1514901, ZFL-1514933, ZFL-1514944, and ZFL-1514966.

2016 for approximately \$4 billion.<sup>40</sup> Many of the key innovations that accompanied MMA's evolution from its "no holds barred" origins into mainstream acceptance were developed before Zuffa purchased the UFC: Record evidence indicates that key rules and regulations, the use of appropriate gloves, timed rounds, weight classes—even the use of the octagonal ring—predate Zuffa's acquisition of the UFC.<sup>41</sup>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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40. See Darren Rovell & Brett Okamoto, *Dana White on \$4 billion UFC sale: 'Sport is going to the next level*, ESPN, July 11, 2016, available at: [http://www.espn.com/mma/story/\\_/id/16970360/ufc-sold-unprecedented-4-billion-dana-white-confirms](http://www.espn.com/mma/story/_/id/16970360/ufc-sold-unprecedented-4-billion-dana-white-confirms).

41. Deposition of Joseph Silva, June 7, 2017 at 83:22-84:2 ("Q. What I'm trying to get at is the basic idea for the sport and the octagon and the early rule book, those were all in existence prior to Zuffa's purchase of the UFC; is that right? A. That's correct."); *id.* at 79:17-84:2 (Silva describes the iterative process he and others used in developing the rules and regulations in force between 1994 and 2001).

42. See Hendrick 30(b)(6) Tr. at 15:3-13 (describing executive structure); Deposition of John Mulkey, April 19, 2017, at 11:22-12:6 (describing his role); Deposition of Ike Lawrence Epstein pursuant to Rule 30(b)(6) V.I., Dec. 2, 2016 at 10:10-21 (same); Silva Dep. at 15:3-5 (stating he retired at the end of 2016). See also ZUF-00096950; Deposition of Joseph Silva, June 7, 2017, at 76:22-84:2. See also ZFL-0000113 at 20; ZFL-0000136 at 24.

[REDACTED]

[REDACTED]

[REDACTED]<sup>44</sup>

## B. Academic Literature on MMA

25. In a book chapter published in 2011, economist Trevor Collier and his co-authors provide an overview of the MMA industry, and analyze the factors influencing the likelihood of a Fighter winning a bout by decision (as opposed to winning by knockout, TKO, or submission) in the UFC.<sup>45</sup> Using data on individual fights from FightMetric, the official statistics provider for the UFC,<sup>46</sup> the authors find that knockdowns and damage inflicted have the largest marginal effect of influencing judges' decisions.<sup>47</sup> The authors analyze only UFC bouts while ignoring other MMA promoters; they note that the UFC is "the largest and most successful organization within the industry."<sup>48</sup>

26. In a 2014 working paper, economist Paul Gift models round-by-round scoring outcomes based on performance characteristics using FightMetric data, as well as non-performance characteristics, to test for certain behavioral biases among MMA judges.<sup>49</sup> The author analyzes "all UFC, WEC, and Strikeforce events promoted under the Zuffa banner"<sup>50</sup> between

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[REDACTED]

[REDACTED]

45. *Aggression in MMA*, *supra*.

46. See <http://www.fightmetric.com/>.

47. *Aggression in MMA*, *supra*, at 97.

48. *Id.*

49. Paul Gift, "Performance Evaluation and Favoritism: Evidence from Mixed Martial Arts," Pepperdine University Working Paper (2014), available at <http://www.fightmetric.com/company>.

50. *Id.* at 7.

September 28, 2001 and November 17, 2012 in Nevada and California.<sup>51</sup> His results provide evidence of bias towards heavy favorites and the Fighter who won the previous round.<sup>52</sup>

27. In a 2012 master's thesis, Jeremiah Johnson correlates win/loss outcomes of MMA bouts using fight statistics from FightMetric.<sup>53</sup> The author's data set includes "every UFC event, as well as every event from other prominent promoters and events deemed to be significant."<sup>54</sup> Johnson finds that the count of knockdowns, takedowns, positional advances, and submission attempts are all positively and significantly correlated with a Fighter winning a bout, while a count of strikes landed is not.<sup>55</sup>

28. In a 2015 article published in the *Journal of Business and Economics*, Richard McGowan and John Mahon estimate an econometric model analyzing the determinants of PPV buy rates for UFC events.<sup>56</sup> The authors' data set encompasses 105 UFC PPV events, beginning with UFC 57 in February 2006 and ending with UFC 170 in February 2014.<sup>57</sup> Based on their econometric analysis, the authors conclude as follows:

The results of our study are not good news for the UFC as a company. The most important takeaway is that the identities of the fighters competing matter more than any title they would be competing for. Thus, when it comes to generating abnormally high PPV buy rates, the fighter has more drawing power than the brand. This conclusion could be used as an argument for fighters to get a larger percentage of the PPV revenue, since the fighters themselves, not the UFC titles, are what truly drive PPV buy rates.<sup>58</sup>

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51. *Id.*

52. *Id.* at 1.

53. Jeremiah Douglas Johnson, *Predicting Outcomes Of Mixed Martial Arts Fights With Novel Fight Variables*, Thesis Submitted to the Graduate Faculty of the University of Georgia in Partial Fulfillment of the Requirements for the Degree Master Of Science (2012), available at [https://getd.libs.uga.edu/pdfs/johnson\\_jeremiah\\_d\\_201208\\_ms.pdf](https://getd.libs.uga.edu/pdfs/johnson_jeremiah_d_201208_ms.pdf)

54. *Id.* at 6.

55. *Id.* at 23.

56. Richard McGowan and John Mahon, *Demand for the Ultimate Fighting Championship: An Econometric Analysis of PPV Buy Rates* 6(6) J. BUS. & ECON. 1032-1056 (2015) [hereafter "McGowan & Mahon"].

57. *Id.* at 1042.

58. *Id.* at 1047. *See also* 1046 ("For example, while Georges St. Pierre welterweight champion of the UFC, the welterweight title had a hugely positive coefficient. However, the coefficient's value was such not because of the importance of the welterweight belt, but because of the drawing power of St. Pierre. After the addition of the fighter ID control variables, only the heavyweight title still has a statistically significant positive coefficient in both Model 1

### C. Forms of Fighter Compensation Paid by Zuffa to Members of the Bout Class

[illegible]

## 1. Show and Win Purses

\_\_\_\_\_

and Model 2. The welterweight title's effect has been correctly reapportioned to Georges St. Pierre, and the women's title's effect has been reapportioned to Ronda Rousey.”).

59. Deposition of Joseph Silva, June 7, 2017, at 31:23-33:22.



[REDACTED]

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61. *Id.*

[REDACTED]

[REDACTED]

[REDACTED]<sup>62</sup>

## 2. Discretionary and Performance Pay

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]<sup>66</sup>

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62. ZFL-0000003. *See also* Deposition of Lorenzo Fertitta, March 23, 2017 at 174:20-179:10; Deposition of Sean Shelby, April 12, 2017 at 208:9-209:17 [REDACTED] Silva Dep. at 32:16-18 & 262:12-17 (same).

63. ZFL-0000003. *See also* Fertitta Tr. 175:5-15.

64. *See* ZUF-00096950.

[REDACTED]

66. *Id.*; *see also* Fertitta Tr. 180:19-22.

### 3. PPV Royalties

Bar Index	Approximate Length (Percentage)
1	10%
2	95%
3	98%
4	90%
5	100%
6	50%

#### 4. Letters of Agreement

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

67. See ZFL-0000003. See also Fertitta Tr. 186:14-187:11 & 188:19-190:6.

1

2

3

4

[REDACTED]

**D. Forms of Fighter Compensation Paid by Zuffa to the Identity Class**

[REDACTED]

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[REDACTED]

[illegible]

78. Mossholder Dep. Ex. 36-A at 32

78. Mossholder Dep. Ex. 36-A at 32

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 84.

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

82. Batchvarova Dep. at 32:5-34:20

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84. *Id.*

85. ZFL-1023959.

86. ZFL-0871571.

87. ZFL-1394078.

88. See ZFL-0000259 and the list of UFC branded video games, *available at* <https://www.giantbomb.com/ufc/3025-248/games/>

89. ZFL-1825387 at row 123 of the Merchandise Licensing Tab. The Topps Trading Card Company Term is listed as “6/5/08 - 5/1/2011 extended to 5/1/16.”

## II. NATURE OF THE CHALLENGED CONDUCT

38. In this section, I describe the Challenged Conduct. I begin by classifying the Challenged Conduct according to its “horizontal” and “vertical” aspects, based on whether the conduct involved other MMA promoters (horizontal) or whether the conduct involved MMA “inputs” such as Fighters (vertical). I then explain how the Challenged Conduct served to initiate, renew, and extend Fighter contracts, making Zuffa’s exclusionary provisions effectively perpetual (or nearly so) for the vast majority of Fighters, especially in relation to Fighters’ relatively short careers.

39. Economists and antitrust practitioners recognize that horizontal *and* vertical conduct can have anticompetitive effects when undertaken by a firm with significant market power, and the effects of each form of conduct can and often do amplify the other. In Parts III.A and III.B, I demonstrate that Zuffa does possess significant monopoly and monopsony power in the Relevant Output and Input Markets, respectively. In Parts III.C and III.D, I demonstrate that the Challenged Conduct did, in fact, foreclose competition and generate anticompetitive effects.

## A. Nature of the Horizontal Conduct

40. Since buying the UFC in 2001, Zuffa has acquired five MMA promoters. Horizontal aspects of the Challenged Conduct include these horizontal acquisitions, as well as Zuffa's counter-programming of other Live MMA Events, and Zuffa's agreements, including non-compete agreements, with other MMA promoters. Economists and antitrust practitioners recognize that horizontal acquisitions can have anticompetitive effects whenever they lessen actual or potential competition with a rival or potential rival.<sup>92</sup> Non-compete agreements and collaboration with horizontal competitors can also be anticompetitive,<sup>93</sup> as can strategic efforts to harm competitors or potential competitors such as counter-programming.<sup>94</sup>

### 1. Acquisitions of Potential Rivals

41. In 2006, Zuffa purchased the World Fighting Alliance ("WFA")<sup>95</sup> and World Extreme Cagefighting ("WEC").<sup>96</sup> WFA was a Las Vegas-based MMA promoter that put on four

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92. U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (2010) [hereafter *Merger Guidelines*] §1 ("[M]ergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise...A merger enhances market power if it is likely to encourage one or more firms to raise price, reduce output, diminish innovation, or otherwise harm customers as a result of diminished competitive constraints or incentives.").

93. See, e.g., Department of Justice and Federal Trade Commission, Antitrust Guidelines for Collaborations Among Competitors (April 2000), §2.2, available at [https://www.ftc.gov/sites/default/files/documents/public\\_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf](https://www.ftc.gov/sites/default/files/documents/public_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf). Although non-compete agreements frequently consist of contracts between employers and employees, Zuffa's non-compete agreements are essentially horizontal agreements with potential competitors, as explained below.

94. See DENNIS CARLTON & JEFFREY PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* (Pearson 2005 4th ed.) [hereafter *MODERN IO*] at 386-87. As Professors Carlton and Perloff explain, strategic efforts to harm competitors are more likely to be harmful when entry is difficult. This condition is satisfied here, given that Zuffa's staggered, multi-bout exclusive contracts constitute an artificial barrier to entry.

95. Deposition of Ike Lawrence Epstein pursuant to Rule 30(b)(6), Dec. 2, 2016 at 70:14-24 (discussing WFA acquisition); see also *UFC Acquires World Fighting Alliance, Inc.*, MMA JUNKIE, Dec. 11, 2016, available at <http://mmajunkie.com/2006/12/ufc-acquires-world-fighting-alliance-inc>.

96. Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006, available at <https://web.archive.org/web/20070929111019/http://www.mmaweekly.com/absolutenm/templates/dailynews.asp?articleid=3053&zoneid=13>.

Live MMA Events between 2001 and 2006.<sup>97</sup> Before its acquisition, WFA attracted headlining Fighters such as Quinton Jackson and Matt Lindland.<sup>98</sup> WEC was a California-based MMA promoter that produced 24 events between 2001 and 2006.<sup>99</sup> Zuffa announced its acquisitions of WFA and WEC on the same day in December 2006. The WFA acquisition was structured as an asset purchase in which Zuffa acquired select Fighter contracts, trademarks, and other intellectual properties;<sup>100</sup> these assets were immediately absorbed into the UFC and WFA ceased to exist. In contrast, Zuffa's purchase of WEC left WEC with its former leadership intact.<sup>101</sup>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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97. Epstein 30(b)(6) Tr. 70:25-71:15. See also <http://www.sherdog.com/organizations/World-Fighting-Alliance-68>.

98. Epstein 30(b)(6) Tr. 72:12-74:9. See also Josh Gross, *Lappen Sues WFA for Breach of Contract*, SHERDOG, Dec. 7, 2006, available at <http://www.sherdog.com/news/articles/Lappen-Sues-WFA-for-Breach-of-Contract-6308>

99. Epstein 30(b)(6) Tr. 26:19-27:3. See also <http://www.sherdog.com/organizations/World-Extreme-Cagefighting-48>.

100. *UFC Acquires World Fighting Alliance, Inc.*, MMA JUNKIE, Dec. 11, 2016, available at <http://mmajunkie.com/2006/12/ufc-acquires-world-fighting-alliance-inc>.

101. Epstein 30(b)(6) Tr. 24:12-13 (stating Zuffa's testimony that it acquired the WEC); Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006, available at <https://web.archive.org/web/20070929111019/http://www.mmaweekly.com/absolutenm/templates/dailynews.asp?articleid=3053&zoneid=13>.

[REDACTED]

103. ZFL-1240584 at 590.

105

111

111. ZFL-1676293 at 96.

44. Affliction Clothing was a U.S.-based MMA clothing label and was one of the primary clothing sponsors of Zuffa Fighters. Backed by prominent investors, AEG put on two successful Live MMA Events.<sup>112</sup> In early 2008, Zuffa terminated its sponsorship relationship with Affliction Clothing when Zuffa received information that Affliction was planning on entering the MMA promoter business under their new subsidiary, AEG.<sup>113</sup> In reaction to Affliction's decision to get into the business of MMA fight promotion, Zuffa barred Affliction from sponsoring any of its events or any of its Fighters.<sup>114</sup> This weakened Affliction, which ultimately decided to exit the MMA Promotion business.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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112. ZFL-2463304 at 25.

113. Tim Ngo, *Affliction Banned From Sponsoring UFC Fighters*, 5TH ROUND, Jan. 25, 2008, available at <http://www.5thround.com/356/report-affliction-banned-from-sponsoring-fighters-in-the-ufc/#more-356>.

114. MMA Mania, "Report: Affliction MMA folds, will now be allowed to sponsor UFC and its fighters," (July 24, 2009), available at <https://www.mmamania.com/2009/07/24/report-affliction-folds-will-now-sponsor-ufc> ("Yahoo! Sports today issued a report that Affliction MMA will cease to exist, coming to terms with Ultimate Fighting Championship (UFC) under an agreement that will allow the clothing brand to once again sponsor the world's top promotion and the fighters under its umbrella. Affliction was 'banned' from doing so when it decided to begin promoting events last year.").

115. ZFL-2020850 at 50-51.

116. ZFL-2764805.

117. *Id.*

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118

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121.

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[REDACTED]

119. ZFL-2193553.

120. *Id.* See also Deposition of Michael Mersch, July 14, 2017, at 447:4-450:8.

121. ZFL-2463304 at 25.

122. Strikeforce would continue to operate as a standalone promoter until January 2013, after which its Fighters and remaining assets were incorporated into UFC. See Nate Wilcox, *More Details Emerge on UFC Acquisition of Strikeforce*, BLOODY ELBOW, Mar. 13, 2011, available at <http://www.bloodyelbow.com/2011/3/13/2047456/ufc-strikeforce-acquisition-more-details-emerge>. See also *Strikeforce confirms Jan. 12 event is final Showtime broadcast*, MMA JUNKIE, Dec. 20, 2012, available at <https://web.archive.org/web/20131102021751/http://www.mmajunkie.com/news/2012/12/strikeforce-confirms-jan-12-event-is-final-showtime-broadcast>.

123. ZFL-2463304 at 9.

124. See <http://www.sherdog.com/organizations/Strikeforce-716>

125. ZFL-2463304 at 14.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

127. ZUF-00085896.

128. *Id.*

[REDACTED]

130. Coker Dep. at 114:22-118:15.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 133

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 136

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 137

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131. *Id.* at 118:16-23.

133. Epstein 30(b)(6), 12/2/2016 174:5-18; *see also* Silva Dep. at 316:9-22.

134. Coker Dep. at 119:9-17.

135. *Id.* at 128:9-14; Coker Dep., Exh. 8 (ZUF-00447778).

136. Coker Dep. at 144:12-15

137. ZFL-2530953 at 53.

52. Record evidence shows that the UFC engaged in counter-programming in attempts

The UFC had a simple strategy for limiting the growth of its competitors; it scheduled free counter-programming at the same time as their competitors with the intention of stealing revenues. And although this approach was not profitable in itself, it worked by preventing new competitors from both achieving profitable operations and recouping their investments in high-profile fighters.<sup>138</sup>

That Zuffa's counter-programming was "was not profitable in itself"<sup>139</sup> indicates that the economic motivation of Zuffa's counter-programming was to use its dominance to harm competition by impairing rivals in an anticompetitive manner, rather than to promote competition in the industry.

[illegible]

139. *Id.*

141. *Id.*

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

[REDACTED]

[REDACTED]

[REDACTED]<sup>144</sup>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]<sup>147</sup>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

144. *Id.*

145. ZFL-0827209.

146. *Id.*

147. Declaration of Scott Coker in Support of Nonparty Bellator Sport Worldwide, LLC's Motion to Quash or Modify Subpoenas, Feb. 22, 2017, ¶20 [hereafter, "Coker Declaration"]. *See also* Coker Dep. at 37:12-38:15 (confirming that Zuffa's counterprogramming of Strikeforce).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 150

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- 
149. ZFL-2005388.  
150. ZFL-2005616.  
151. ZUF-00421380 at 386.  
152. *Id.* at 387.  
153. ZUF00447547 at 570.  
154. ZUF00447547 at 562.

[REDACTED]

[REDACTED]

[REDACTED] 157

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 160

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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156. See ZFL-2587231.

157. See <http://www.fightline.com/fl-news-2010-0417-487130-strikeforce-> (“Although the UFC will not counter Strikeforce’s second CBS primetime broadcast with a live show of their own tonight, MMA’s monopoly will air November’s “UFC 110: Nogueira vs. Velasquez” event on Spike TV to try and retain their stranglehold on the sport.”).

[REDACTED]

159. ZFL-2022954 at 55.

160. ZUF-00339684.

161. Deposition of Jeremy Lappen, Feb. 28, 2017, at 44 (“Q: Do you remember a specific time when another promotion counter programmed to one of your events? A: I don’t remember the specific times, but I know that the UFC counter programmed our events. Q: Would you say that happened often while you were president of fight operations? A: I don’t remember how often it happened. It happened more than once. But I don’t remember how many times. Q: Did any other MMA promoters counter program Pro Elite events? A: Not that I remember.”).

162

59. Record evidence indicates that Zuffa also used the threat of litigation to impair would-be rivals. For example, IFL was an atypical MMA promoter in that matchups were team affairs, with each team member facing off in a one-on-one bout.<sup>163</sup> IFL held 22 events across the United States between 2006 and 2008.<sup>164</sup> It collapsed due to financial difficulties (in part, as discussed below, due to the Challenged Conduct) in 2008.<sup>165</sup>

60. Before IFL had put on its first promotional Live MMA Event, Zuffa sued it, alleging that the fledgling company had illegally hired some of its former employees who took with them confidential trade secrets.<sup>166</sup> IFL co-founder Kurt Otto at the time stated that:

Rather than having to do with “confidential” information or purported trade secrets, I believe that, to the contrary, as described below, this lawsuit has everything to do Zuffa’s effort to stifle and stamp out perceived competition in the Mixed Martial Arts (“MMA”) marketplace in a transparent attempt to put the IFL out of business before it ever gets off the ground.<sup>167</sup>

IFL counter-sued over allegations that UFC had threatened Fox Sports with a lawsuit if Fox were to sign a deal with IFL.<sup>168</sup> Both cases generated substantial legal expenses for IFL.<sup>169</sup>

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162. ZFL-2483111 at 13.

163. Jonathan Snowden, *Disastrous debut costs IFL millions: The history of MMA on television, Part 2*, BLEACHER REPORT, Dec. 12, 2012, available at <http://bleacherreport.com/articles/1442316-disastrous-debut-costs-ifl-millions-the-history-of-mma-on-television-part-2>.

164. See <http://www.sherdog.com/organizations/International-Fight-League-742>.

165. IFL’s assets were acquired by HDNet. See IFL SEC Form 10-K (2009), at 1 (“On November 17, 2008, IFLC sold substantially all of its assets to HDNet LLC...”). See also Tom Ngo, *IFL: Going, Going...Gone! UFC Here We Come?*, 5TH ROUND, July 25, 2008, available at <https://web.archive.org/web/20091201045527/http://www.5thround.com/07252008/news/1293/ifl-going-goinggone/>.

166. Jeffrey Thaler, *Breaking Down the Match-Up: UFC vs. IFL*, SHERDOG, Mar. 2, 2006, available at <http://www.sherdog.com/news/articles/Breaking-Down-the-MatchUp-UFC-vs-IFL-4051>.

167. Deposition of Kurt Otto, February 6, 2017, Exhibit 6, ¶ 4.

168. Thaler, *supra*.

169. Deposition of Kurt Otto, February 6, 2017, at 161.



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]<sup>174</sup>

## B. Nature of the Vertical Conduct

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

65. Economists and antitrust practitioners recognize that vertical restraints such as these, when used by a dominant firm, can harm competition by blocking or impairing access to key inputs, thereby foreclosing firms that would otherwise provide competitive discipline to the

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173. ZUF-00031544.

174. ZFL-1019758.

175. *See* Appendix, Table A1. Excludes two non-Zuffa contracts (from Invicta and EliteXC) that were also produced by Zuffa.

dominant firm. By making it difficult or impossible for would-be rivals to acquire key inputs, such conduct restricts or eliminates the would-be rival's output, revenue, and ability to compete effectively.<sup>176</sup>

- 1. Exclusive Fighter Contracts Prohibit Fighters from Working with MMA Promoters other than Zuffa for the Often Lengthy Duration of the Contracts**

[illegible]

176. MODERN IO, *supra*, at 371-375; *see also id.* at 429-430; Salop, *supra*.

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

## 2. Zuffa's Exclusive Contracts with Fighters Permit Zuffa to Extend the Duration of the Contracts

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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181. *Id.*

183. *Zuffa Contract Summary* at 8. See also Appendix, Table A1.

[REDACTED]

[REDACTED] 185

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

187. *Zuffa Contract Summary* at 4.

188. ZUF-00162329-382 at 361. *See also* DB-ZUFFA-00006389 at 392 (repeating same characterization in 2012).

[illegible]

189. Goldman 30(b)(6) Tr. 72:17-24.

193. *See* Appendix, Table A1.

196. See *Zuffa Contract Summary* at 48.

[REDACTED]

[REDACTED]

### 3. Other Vertical Restraints

[REDACTED]

[REDACTED]

198. See Appendix, Table A1.

199. *Zuffa Contract Summary* at 8. See also [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

204. In November, 2009 EA Sports announced the launch of an MMA video game featuring Strikeforce fighters. See <https://web.archive.org/web/20091109023530/http://mmajunkie.com/news/16763/strikeforce-to-be-flagship-promotion-in-ea-sports-mma-videogame.mma>

[REDACTED]

**C. Zuffa Exploited the Exclusionary Terms of the PARs to Make Exclusion Effectively Perpetual**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**1. Zuffa Exploited the Exclusionary Terms to Extend and Renew Fighter Contracts**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

77. Zuffa exercised significant discretion over the timing of bouts in a Fighter's contract.<sup>207</sup> Record evidence indicates that Zuffa's ability to control the timing of a Fighter's matchups, the identity of opponents, and a Fighter's placement on the Fight Card conferred a negotiating advantage, particularly given that members of the Bout Class were compensated only when they fought.<sup>208</sup> The ability to force a Fighter to wait longer before the final bout (also the Fighter's next payday) incentivizes the Fighter to agree to Zuffa's terms for a new contract even if he or she preferred to fight for another MMA promotion or merely wanted to test his or her worth in "free agency."<sup>209</sup>

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207. Deposition of Denitza Batchvarova, Zuffa's Senior Vice President of Strategy, January 25, 2017, at 36:7-11

[REDACTED]

209. Deposition of Plaintiff John Fitch, February 15, 2017 at 105 ("Q: Okay. And in this case, I think we've established that had you fought two fights [(of three)] and then renegotiated the contract? A: Correct."). *See also id.* at

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

110 (“A: Yeah. I was just pointing out, this is one of the strategies they’re using. You can see that fight was March 1, 2008. I hadn’t fought since September, so money’s running low, I need money, I need to fight. This agreement is sent to me in February; right? So -- oh, wait a minute, that’s January. So that’s two months before that fight. They’re holding my bout agreement hostage. They’re holding my next fight hostage until I sign this. They do that often. I think if you look at the other one, you’ll probably see that too. Signed 4/6, yes. Signed 5/6, which is May, yeah, so I signed that in May. I fought in June. Q: So you’re saying that at that time they were withholding a fight from you until you resigned? A: I’m saying they do that to everybody. We’re going to hold your bout agreement until you sign your extension. We won’t allow you to become a free agent.”). *See also* Deposition of Plaintiff Brandon Vera, February 6, 2017 at 118 (“A: Every time a fighter has -- is coming up on his renegotiation period, it was common knowledge in our industry that if you didn’t sign the new agreement, that you were going to get frozen out or put on a dark show so that nobody would ever see your last fight. That’s common knowledge across the board.”).

210. Deposition of Plaintiff Kyle Kingsbury, February 17, 2017 at 18 (“[T]hrough threats and direct punishment, Dana really controlled how our careers went. And he could stick you on the undercard in your next fight against some unfavorable opponent. If you’re on the undercard, you would make far less. If anything in sponsorship because you weren’t on TV. He might sit you on the bench for a while. That’s happened to numerous fighters. And then give you an unfair brutal opponent on an undercard. There were a number of different ways that Dana would use his power to our disadvantage.”).

211. ZFL-2647127.

212. MARTIN0034081 at 81-82.

213. Deposition of Joseph Silva at 322:12-16.

[REDACTED]

[illegible]

216. ZFL-1404974, at 976 (emphasis added).

217. See Parts III.C.1-2, *infra*.

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[REDACTED]

[REDACTED]<sup>219</sup>

80. If the Fighter refused to sign a new contract or tried to hold out for a better bargain, Zuffa had several tools at its disposal to put pressure on the Fighter, including, among other practices, delaying the final bout, offering an inappropriate or unfavorable match-up, and/or giving the last fight poor placement on the event's Fight Card. Delaying a Fighter's last fight was costly to Fighters, who receive compensation from Zuffa only when they fight.<sup>220</sup> Zuffa could also ensure that a Fighter refusing to sign a new contract made less money at his final bout.<sup>221</sup> Zuffa could, in addition, ensure that the Fighter was pitted against a mismatched or unfavorable opponent who could hinder the Fighter's career, thus putting the Fighter in the position of taking the fight and risk losing or being injured, or turning down the fight and triggering an extension of the Fighter's contract.<sup>222</sup> As Plaintiff Kingsbury made clear:

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219. Silva Dep. at 456:21-25. *See also* Silva Dep. at 455:6-456:11; Silva Exh. 53 ([REDACTED])

220. Deposition of John Fitch, February 15, 2017 at 119 ("Q: And the reason why you would have to had sit out a year is because after you finished your fight --A: Because if I didn't sign up, if I didn't to do the re-up with the contract, I wouldn't have gotten a bout agreement. Q: Until? A: They would have exercised their time limit term to the full. Q: And the reason you know about that is because you heard about Huerta? A: Because they had done it to other people. Q: And you've heard about -- you gave one other example; is that correct? A: Huerta and Arlovski. Q: So you know two examples -- A: I know of two examples where the guys were brave enough to see it through. Most guys know if you don't sign the re-up, you don't get your bout agreement. If you don't get your bout agreement, you don't get paid, you don't get money, you can't feed your children.").

221. Silva Dep. at 385:15-21([REDACTED])

Joe Silva wanted me to fight [Glover Teixeira, a training partner of Chuck Liddell] on the undercard in Glover's first fight in the UFC. And that is exactly the kind of thing that hurts fighters. Nobody knew who he was. He was extremely talented. It was a lose-lose. If I beat him, I'm supposed to beat him. If I don't beat him, I just got my ass kicked by a guy that nobody knows.

I had another unknown opponent in his first fight in the UFC. I had to fly all the way to England for it. It was on the undercard, and it was against a guy who at the time was 11 and 0, no losses, and not a single opponent had made it out of the first round with him. So he was highly decorated and not known. Again, as stated, a lose-lose for me. And then I had received the damage that I did in that fight. And with my second orbital blowout on the same side, I was really concerned for my health fracturing the eyebrow as well and was just considering is it worth it? I can't get out of my contract. There's nowhere else to go at this point. Strikeforce didn't exist anymore. Pride didn't exist anymore. And I had no way of saying no.<sup>223</sup>

Fighters who chose to reject inferior matchups also faced the risk that Zuffa would retaliate by matching them against even less desirable opponents in the future. According to Dana White,

I can tell you this man, if you call Joe Silva and turn down a fight, you might as well say 'fucking rip up my contract.' He will... yeah. He's a mean little fucker. You don't call Joe Silva and tell him you don't want to fucking fight anybody man. You might as well just take the fight, 'cuz, 'cuz, it's gonna be worse, if you do [refuse the fight]. You might as well just do it, [just say] fuck it, alright? I'll fight him.<sup>224</sup>

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223. Deposition of Kyle Kingsbury, February 17, 2017, at 118. *See also* Deposition of John Fitch, February 15, 2017, at 87 ("A: So they took really tough amateur-type guys, but the crowd didn't know who they were. It's a lose-lose fight for somebody with notoriety. Because if you don't go in there -- if you go in there and completely beat the guy up, fine, you were supposed to. They didn't know who the other guy was. You go in there and you win, but you don't destroy the guy, oh, you suck now because you didn't destroy a guy with no name. Or you lose, you lose to a guy who has no name, and now your notoriety and your value drops immensely. They may even cut you because you lost. So that is one of the most subtle ways that they really put fear into people, is they control your destiny. They control who you fight, when you fight, and how much you fight for.").

Zuffa could also retaliate by giving a Fighter inferior card placement; for example, a Fighter could be placed on the undercard instead of the Top of the Card.<sup>225</sup> If a Fighter lost even once, Zuffa could use (or threaten to use) the Cut Clause to cut Fighters in the middle of their contracts, allowing the Fighter to fight again only after agreeing to lower compensation.<sup>226</sup>

[REDACTED]

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[REDACTED]

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229. ZFL-2685237.

230. Deposition of Joseph Silva at 412:7-12

. See also Deposition of Joseph Silva at 408:24-413:7.

231. ZFL-0529761 at 62-63.

232. ZFL-2479576.

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234. ZFL-1897652 at 796. Silva used the term “Bellaforce,” which was a made-up combination of Bellator and Strikeforce, to refer generically to other MMA promoters. *See* Deposition of Joseph Silva at 469:22-25.

235

236. See Part II.B.2, *supra*.

237. Silva Dep. at 463:23-464:8.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

85. In the economic literature, contractual terms such as Zuffa's right to match clause are known as the "Right of First Refusal" ("ROFR").<sup>240</sup> Economists have shown that ROFRs, under certain conditions, can be beneficial to buyers (in this case, Zuffa), and harmful to both sellers (in this case, Fighters) and potentially competing buyers (in this case, other MMA promoters). Because "the seller places himself in a disadvantageous position by awarding the special buyer this right [of first refusal],"<sup>241</sup> economic analysis "offers prescriptive advice: considerable caution should be exercised prior to granting a right of first refusal."<sup>242</sup> Other economists have shown that ROFR can reduce the incentives for other buyers to compete with the favored buyer, which "reduces the marketability of the seller's asset."<sup>243</sup> As economist Michael

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238. See Parts III.C.1-2, *infra*. Indeed, as discussed further below the UFC engineered its contracts such that their possible expirations would be staggered, preventing other MMA promotions from being able to gain access to multiple top-flight Fighters at the same time. See Part III.C.3, *infra*.

[REDACTED]

240. Sushil Bikhchandani, Steven Lippman & Reade Ryan, *On the Right of First Refusal* 5(1) ADVANCES IN THEORETICAL ECON. (2005).

241. *Id.* at 2.

242. *Id.*

243. Marcel Kahan, Shmuel Leshem & Rangarajan Sundaram, *On First-Purchase Rights: Rights of First Refusal and Rights of First Offer*, 14 AMERICAN L. & ECON. REV. (2012). See also Leandro Arozamena & Federico Weinschelbaum, *A note on the suboptimality of right-of-first-refusal clauses*, 4(24) ECON. BULLETIN (2006) 1-5, at 1 ("We show that, under independent private values, no mechanism that includes an ROFR clause can maximize the

Leeds and his co-authors explain in *The Economics of Sports*, restricted free agency in professional sports confers an ROFR to a player's original team; as a consequence, "the expectation that the original team will match any offers may reduce the size or number of offers a restricted free agent receives."<sup>244</sup>

[REDACTED]

[REDACTED]

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joint expected surplus of the seller and the right-holder. Adding such a clause to any given auction format, then, is jointly suboptimal for the two parties involved.").

244. MICHAEL LEEDS, PETER VON ALLMEN & VICTOR MATHESON, *THE ECONOMICS OF SPORTS* (Routledge 5th ed. 2016) [hereinafter *ECONOMICS OF SPORTS*].

245. See Part II.C.2, *infra* (documenting Fighters' short careers); see also Hendrick Dep. V.I ( [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**2. Given Fighters' Short Career Durations, Zuffa's Exclusionary Provisions Were Effectively Perpetual for Fighters Who Zuffa Wished to Retain**

88. I define the cumulative duration of exclusivity as the sum of: (1) the contract term (including the lead-up time to a Fighter's first bout); (2) the option period (for those Fighters who had such a provision); (3) any exclusive negotiation period; and (4) the right to match period.<sup>249</sup> During (1), (2 if present), and (3), Fighters are directly prohibited from negotiating with or fighting for any other MMA promoter. For the duration of (4), Fighters remain unable to negotiate freely with other MMA promoters, because Zuffa can retain the Fighter simply by matching the terms of any competing offer, with the Fighter contractually obligated to accept Zuffa's matching terms without further negotiations. In other words, Zuffa maintained and exercised the unilateral and exclusive ability to block any Fighter under contract with it from fighting for another MMA

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<sup>247</sup> Coker Declaration ¶15.

[REDACTED]

<sup>249</sup> See Part II.B for details of these contractual terms.

Promotion for the entire period, stretching from (1) through and including (4).<sup>250</sup> Zuffa's ability to withhold Fighters from other MMA promoters factors prominently into my analysis of foreclosure and the anticompetitive effects of the Challenged Conduct.<sup>251</sup>

[REDACTED]

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250. Silva Dep. at 186:4-12 ([REDACTED]).

251. See Parts III.C-D, *infra*.

252. Zuffa has produced contracts executed by Fighters between May 2001 and November 2015. I have no reason to believe that contracts executed after November 2015 differ materially from those executed beforehand.

[illegible]


[REDACTED]					
[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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[REDACTED] 257

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

254. See ZFL-1376378-79.

255. Calculated using data obtained from Sherdog.com.

[REDACTED]

257. *Id.*

### III. THE CHALLENGED CONDUCT WAS EXCLUSIONARY AND HARMED COMPETITION

92. Economists and antitrust scholars have identified criteria to determine whether conduct is exclusionary and harmful to competition, and these criteria can be informed by economic analysis. In this section, I lay out these criteria in detail, and I demonstrate that they are satisfied here.

93. In Parts III.A and III.B, I demonstrate that Zuffa has significant monopoly and monopsony power, using well-accepted “indirect” and “direct” methods of proof. Indirect proof of market power involves defining relevant product (and geographic) markets, demonstrating that Zuffa has high market shares within the relevant markets, and showing that substantial barriers to entry exist. Direct proof is more straightforward, and simply requires evidence that Zuffa has in fact exercised monopoly and/or monopsony power. It bears emphasis that product market definition is a tool to *infer* pricing power—that is, the ability to raise prices above competitive levels, or to suppress compensation below competitive levels. Because here we have direct evidence that Zuffa exercised monopoly and monopsony power, indirect evidence is of secondary importance.<sup>258</sup>

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258. See, e.g., Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, in Paulo Buccirossi, ed., *HANDBOOK OF ANTITRUST ECONOMICS* (2007) [hereafter, “Baker & Bresnahan”], at 15 (“Historically, in the antitrust world, market power has most commonly been identified through inference from a high market share. But direct evidence has increasingly become important as an alternative, in part because academic economists have developed a number of econometric approaches for measuring market power.”). Baker and Bresnahan also note that “quantitative methods of measuring market power through direct evidence have parallels involving the use of qualitative evidence.” *Id.* See also Aaron S. Edlin & Daniel L. Rubinfeld, *Exclusive or Efficient Pricing? The Big Deal Bundling of Academic Journals*, 72 *ANTITRUST L.J.* 119, 126 (2004) (“Market definition is only a traditional means to the end of determining whether power over price exists. Power over price is what matters...if power can be shown directly, there is no need for market definition: the value of market definition is in cases where power cannot be shown directly and must be inferred from sufficiently high market share in a relevant market.”). See also PHILLIP E. AREEDA, EINER ELHAUGE & HERBERT HOVENKAMP, 10 *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* 267, 325–28, ¶ 1758b. (1996 & Supp. 2003); see also PHILLIP AREEDA, LOUIS KAPLOW & AARON EDLIN, *ANTITRUST ANALYSIS: PROBLEMS, TEXT AND CASES* ¶ 344 (6th ed. 2004).

94. In Part III.C, I lay out the criteria for demonstrating that the Challenged Conduct foreclosed competition to a substantial degree, and I show that these criteria are satisfied here. In Part III.D, I show that the Challenged Conduct generated anticompetitive effects.

#### A. Indirect Evidence of Zuffa's Market Power

95. In general, a threshold requirement for demonstrating that the Challenged Conduct was exclusionary and harmful to competition is to show that the conduct at issue was undertaken by a firm with significant market power.<sup>259</sup> As explained below, for my indirect proof of monopsony power, I define a Relevant Input Market of MMA Fighters, which is measured in two ways using industry-accepted databases. I also define a Relevant Input Submarket of "Headliners," consisting of all Fighters ranked one through fifteen according to industry-accepted databases in any of the ten major MMA weight classes.<sup>260</sup>

96. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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259. See, e.g., Salop, *supra*, at 374 (noting that "monopoly and dominant firm markets" are where potentially exclusionary conduct "raise[s] the greatest concerns," although this conduct "can allow non-dominant firms that lack market power to achieve that power, particularly where parallel exclusion by multiple firms can lead to anticompetitive coordination."). See also PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 801, at 318 (2d ed. 2002); see also Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L.R. 253 (2003) [hereafter, "Elhauge"], at 257-261; 330-339.

260. I consider the Relevant Input Submarket to be the top 15 Fighters in each class weight class. I choose 15, as opposed to 10, 25 or some other number, because (1) FightMatrix.com only lists the top 15 for their "pound-for-pound" fighter ranking (<http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=111&Division=-1>), (2) UFC's internal fighter rankings display the top 15 fighters per weight class ([http://www.ufc.com/rankings?fb\\_comment\\_id=6086517324953#f17c6b2f929913](http://www.ufc.com/rankings?fb_comment_id=6086517324953#f17c6b2f929913)), and (3) the top 15 are displayed in USA Today/MMA Junkie's ranking system (<http://mmajunkie.com/rankings>). [REDACTED]

261. This includes all Fighters in the Relevant Input Submarket as well, which is a subset of the Relevant Input Market.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

97. The DOJ's and FTC's *Horizontal Merger Guidelines* define a relevant antitrust (output) product market as a product or group of products such that a hypothetical monopolist that was the only present and future seller of those products could profitably impose a small but significant and non-transitory increase in price (the "SSNIP") over the competitive level.<sup>263</sup> The SSNIP is normally taken to be five percent.<sup>264</sup> If enough customers view some products outside a proposed product market as sufficiently interchangeable with products within the proposed market, the hypothetical monopolist could not profitably raise prices by the SSNIP. The forgone profits

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262. See HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY 82-83 (3d ed. 2005). There is no consensus as to precisely how high a firm's market share must be to convey monopoly power. If an industry has a competitive fringe that imposes some competitive discipline on the dominant firm, many economists consider market shares in the range of 30 to 50 percent to be too low to infer monopoly power. See MODERN IO at 644. In this case, the fringe of the market is not competitive, as a consequence of the Challenged Conduct.

263. *Merger Guidelines* §4.1.1.

264. *Id.* §4.1.2 ("The Agencies most often use a SSNIP of five percent of the price paid by customers for the products or services to which the merging firms contribute value. However, what constitutes a "small but significant" increase in price, commensurate with a significant loss of competition caused by the merger, depends upon the nature of the industry and the merging firms' positions in it, and the Agencies may accordingly use a price increase that is larger or smaller than five percent.").

from the switching of consumers would exceed increased profits gained from the higher price paid by remaining customers.

98. When it comes to input markets, market definition proceeds in an analogous fashion for the analysis of monopsony power. In this case, a relevant (input) market consists of a product or group of products such that a hypothetical monopsonist that was the only present and future buyer of those products could profitably impose a small but significant and non-transitory *decrease* in prices (or wages) below the competitive level. In the buying context, market definition turns on “the alternatives available to sellers in the face of a decrease in the price paid by a hypothetical monopsonist.”<sup>265</sup> If sellers enjoy “numerous attractive outlets for their goods or services,”<sup>266</sup> then the hypothetical monopsonist would not be able to depress prices (or wages) significantly below competitive levels. Conversely, the exercise of monopsony power will be profitable when sellers have few competitive outlets to which to turn in response to a decrease in the price (or wage).<sup>267</sup>

### **1. The Relevant Input Market**

99. Following the *Merger Guidelines*, I define the Relevant Input Market and Submarket based on the alternatives to which Fighters could reasonably substitute to counteract an exercise of monopsony power by Zuffa. As explained below, I provide two alternative metrics of the Relevant Input Market using two industry-accepted databases. The Relevant Input Submarket, a subset of the other markets, is also measured using industry-accepted databases:

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<sup>265</sup> *Id.* §12.

<sup>266</sup> *Id.*

<sup>267</sup> Given the nature of the Challenged Conduct—namely, foreclosure from a critical or must-have input—an alternative way to think about input market definition is from the perspective of potential rival MMA promoters: What is the narrowest set of Fighters that could be foreclosed via exclusionary agreements by a hypothetical monopsonist such that a potential rival MMA promoter would be materially impaired in its ability to compete effectively in the Relevant Output Market? Both frameworks lead to the same answer. *See, e.g.* Eric Cramer & Daniel Berger, *The Superiority of Direct Proof of Monopoly Power and Anticompetitive Effects in Antitrust Cases Involving Delayed Entry of Generic Drugs* 39 UNIVERSITY OF SAN FRANCISCO L. REV. (2004) at 112-113 (“[A] relevant product market is always defined in relation to the claims that give rise to the inquiry in the first place.”).

1. Under the Tracked measure, all Fighters fighting for an MMA promoter included in the FightMetric database (which “tracks” Fighter performance) are included in the Relevant Input Market. A hypothetical monopsonist over all Tracked Fighters could profitably exercise monopsony power, because an MMA promoter without Tracked Fighters would not be able to offer competitive matchups to advance a Fighter’s career.
2. Under the Ranked measure, the Relevant Input Market is expanded to include (1) all Fighters encompassed by the Tracked measure; and (2) any Fighter ranked in the FightMatrix ranking database. This includes Fighters ranked from 1 through 650 in any of the fourteen MMA weight classes in the FightMatrix database. The Ranked measure also includes ONE Championship, as explained below. A hypothetical monopsonist over all Ranked Fighters could profitably exercise monopsony power, because an MMA promoter without Ranked Fighters would be even less able to offer competitive matchups than an MMA promoter without Tracked Fighters.
3. Under the Headliner definition, the Relevant Input Submarket includes the top fifteen Fighters in any of the ten major MMA weight classes,<sup>268</sup> as ranked by FightMatrix. A hypothetical monopsonist over all Headliners could profitably exercise monopsony power, because non-Headliners are, by definition, lower-ranked Fighters that would typically provide sub-optimal matchups for Headliners.

100. As explained below, athletes from combat-oriented sports outside of MMA such as boxing and wrestling are outside the Relevant Input Market, as are athletes from non-combat sports such as football or hockey. A market definition that encompassed Fighters from *all* MMA promoters would also be far too broad: The vast majority of these MMA promoters do not offer comparable competitive alternatives to which MMA Fighters could reasonably substitute to counteract an exercise of (buyer) market power by Zuffa. As explained below, the evidence indicates that even the most prominent non-Zuffa MMA promoters are at best distant substitutes to Zuffa from the perspective of Fighters.<sup>269</sup> Nevertheless, both my Tracked measure and my Ranked

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268. See Part I.A, *supra* The Headliner definition omits the following minor weight classes: men’s strawweight, women’s featherweight, women’s flyweight, and women’s atomweight weight classes. However, these weight classes are included in the Ranked measure of the Relevant Input Market.

269. See also Part III.A.8, *infra*.

measure conservatively include Fighters from non-Zuffa MMA promoters, based on two alternative industry-accepted databases.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

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[REDACTED] [REDACTED]

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273. ZFL-2547712, at 24.

274. *Id.* at 27.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]<sup>276</sup>

[REDACTED]

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[REDACTED]

[REDACTED]

276. See, e.g., Jason Gay, *Mayweather and McGregor's Mindless Summer Fight*, WALL STREET JOURNAL, June 15, 2017, available at <https://www.wsj.com/articles/mayweather-and-mcgregors-mindless-summer-fight-1497535595>. According to an editor of *Bloody Elbow*, although mildly competitive through the first nine rounds, the fight was more a spectacle, as McGregor was never close to a win. See, e.g., Mookie Alexander, *Six takeaways from Floyd Mayweather vs. Conor McGregor*, BLOODY ELBOW, Aug. 27, 2017 ("McGregor was never going to have the stamina to go the distance, and outside of the opening round counter uppercut and I believe a 9th round body shot (that looked like a low blow), Mayweather never seemed particularly fazed by his punches. Once Mayweather knew what he was getting from Conor after the first few rounds, he was willing to walk forward and land his own shots, and to me that was the obvious sign that McGregor was on borrowed time.").

277. Zuffa's Response to Plaintiffs' Requests for Admission No. 37.

[REDACTED]

[REDACTED]

[REDACTED]

104. A market definition that encompassed Fighters from *all* MMA promoters would clearly be too broad: Although there are hundreds of non-Zuffa MMA promoters, they do not offer comparable competitive alternatives to which MMA Fighters could reasonably substitute to counteract an exercise of market power by Zuffa. As explained below, nearly all non-Zuffa promoters are small regional outfits that have none of the top Fighters in any weight class and do not even seek to compete with the UFC for talent. Indeed, even the most prominent non-Zuffa promoters do not have access to a sufficiently deep pool of talented Fighters to provide competitive matchups to advance a Zuffa Fighter's career, thus making non-Zuffa MMA promoters an inadequate substitute. Thus, even a (not so) hypothetical monopsonist controlling only Zuffa Fighters would be able to exercise significant monopsony power. Because the Relevant Input Market and Submarket encompass Fighters associated with non-Zuffa promoters, these market definitions are likely overly broad and thus conservative, as explained below.

[REDACTED]

[REDACTED]

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278. For example, Wes Shivers played three games in the NFL for the Atlanta Falcons in 2000, but did not begin competing in MMA events until 2007. See <http://www.sherdog.com/fighter/Wes-Shivers-49521>; see also <http://www.pro-football-reference.com/players/S/ShivWe20.htm>. Shivers fought for small promotions with the exception of a single UFC exhibition bout (in 2009) and a single Strikeforce bout (in 2010). See <http://www.sherdog.com/fighter/Wes-Shivers-49521>. Similarly, Steve Bossé retired from the North American Hockey league to pursue a career in MMA in 2007, but did not make his debut in the UFC until 2015, after competing for years in minor promotions. See <http://www.ufc.com/fighter/steve-Bosse?id;> see also <http://www.sherdog.com/fighter/Steve-Bosse-22732>.

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

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[REDACTED]

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[illegible]

283. DB-ZUFFA-00006389 at 439.

284. See Part III.C.1, *infra*.

285. See ZFL-2022954 at 57.

286. *Id.*

287. See ZUF-00284193; see also Zuffa's Response to Plaintiffs' Request for Admission No. 24 (On April 8, 2013 at the Global Speaker Series at the Stanford Graduate School of Business in Stanford, California, Dana White stated: "Nobody ever wants to look at themselves as a feeder league to the UFC. Deal with it. You're all feeder leagues to the UFC, okay. I want them to exist and make money because those guys create the next talent that will end up in our organization someday.").

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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288. Zuffa's Response to Plaintiffs' Request for Admission No. 33.

[REDACTED]

[REDACTED]

291. At his deposition, Joe Silva testified that [REDACTED]  
[REDACTED] Silva Dep. 143:7-9.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

108. To be conservative, I define the Relevant Input Market to include certain Fighters from certain non-Zuffa promoters, based on data from industry-accepted tracking and ranking databases. The first of these databases is FightMetric, which tracks the round-level fighting

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

statistics of Fighters associated with the “most prominent [MMA] organizations in the world,”<sup>295</sup> and is the “the official statistics provider to the UFC.”<sup>296</sup> As noted above, FightMetric data have been used in prior academic work.<sup>297</sup> In addition, Joe Silva testified that FightMetric data were perceived in the industry as “very credible.”<sup>298</sup> The second database used to measure the Relevant Input Market is FightMatrix (not to be confused with FightMetric), which is a global MMA Fighter ranking system that ranks MMA Fighters by weight class, including up to 650 Fighters per weight class.<sup>299</sup> FightMatrix is recognized by Zuffa itself as an authoritative source of MMA Fighter rankings.<sup>300</sup>

109. Under the “Tracked” measure, all Fighters who fought for an MMA promoter included in the FightMetric database (which “tracks” Fighter performance) are (conservatively) included in the Relevant Input Market. In addition to the MMA promoters covered in the FightMetric data, I conservatively designate all Fighters associated with MMA promoters acquired by Zuffa in this measure of the input market.<sup>301</sup> As seen in Table 2, the Fighters covered under this measure of the Relevant Input Market include those affiliated with Affliction, Bellator, Dream, EliteXC, Pride, Strikeforce, UFC, World Extreme Cagefighting, and World Fighting Alliance. As

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295. E-mail from Remi Genauer, Director, FightMetric, to Economists Incorporated (Nov. 19, 2016, 19:48 ET).

296. FightMetric, About the Company, available at <http://www.fightmetric.com/company>. See also Trevor Collier, Andrew Johnson & John Ruggiero, *Aggression in Mixed Martial Arts: An Analysis of the Likelihood of Winning a Decision*, in 4 VIOLENCE AND AGGRESSION IN SPORTING CONTESTS, SPORTS ECONOMICS, MANAGEMENT AND POLICY SERIES, 97-109, 98 (Springer 2011).

297. See Part I.B.

298. Silva Dep. at 162:19-164:18.

299. According to its website, the FightMatrix ratings system “takes an unbiased, objective look at all available professional MMA results from day 1 to the present.” See <http://www.fightmatrix.com/faq/>.

300. See Deposition of Javier Vasquez, February 14, 2017 at 67, Exhibits 42-44.

301. Record evidence indicates that Zuffa’s acquisitions targeted perceived rivals, or promoters viewed as potential rivals. See Part II.A (summarizing Zuffa’s horizontal acquisitions). This definition is likely over-inclusive: A potential future rival is not the same as an actual rival. In addition, there is evidence that Zuffa sometimes acquired rivals to “to serve as a venue in which to groom up-and-coming talent”—that is, to serve a more complementary role. See Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006.

seen below, with the exception of Bellator, all of these promoters have gone out of business or been acquired by Zuffa.

TABLE 2: PROMOTERS ASSOCIATED WITH FIGHTERS IN THE RELEVANT INPUT MARKET  
(MEASURED BY TRACKED FIGHTERS)

Promoter Name	In FightMetric?	Owned/Acquired by Zuffa?	Final Year
World Extreme Cagefighting	X	X	2006
World Fighting Alliance		X	2006
Pride Fighting Championships	X	X	2007
EliteXC <sup>302</sup>	X		2008
Affliction	X	X	2009
Strikeforce	X	X	2011
Dream	X		2012
Bellator	X		N/A
UFC	X	X	N/A

110. The second, “Ranked” measure expands the Relevant Input Market relative to the first measure: The Ranked measure includes (1) all Fighters encompassed by the “Tracked” measure; and (2) any Fighter ranked in the FightMatrix database. In addition, the Ranked measure also includes the Asian MMA promoter ONE Championship. ONE Championship has a large presence in Asia, and, according to Zuffa, is the only international MMA promoter that potentially competes with Zuffa for talent.<sup>303</sup> Including ONE Championship is conservative, given that ONE Championship has made only limited inroads outside of Asia.<sup>304</sup> According to FightMatrix, even

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302. Although EliteXC was not directly acquired by Zuffa, its parent, Pro Elite, was acquired by Strikeforce shortly after EliteXC ceased promoting bouts. *See* Coker Tr. 23:4-8 [REDACTED]. Thus, Zuffa ultimately realized the benefits of that acquisition when it acquired Strikeforce in 2011.

303. *See* Part III.A.3, *infra*.

304. For example, only a single Fighter from ONE Championship appears among the 165 slots delineating top-ranked MMA Fighters in the *USA Today/MMA Junkie* ratings. *See* <http://mmajunkie.com/rankings> (accessed April 18, 2017).

an undefeated record in ONE Championship does not necessarily advance a Fighter's rank, due to a lack of high-quality opponents.<sup>305</sup>

111. It bears emphasis that both the "Tracked and "Ranked" measures of the Relevant Input Market are quite conservative, given that even the most prominent non-Zuffa promoters are inferior substitutes from the perspective of Fighters. The list of MMA promoters associated with Fighters included in the Ranked measure includes the World Series of Fighting, M-1 Challenge, King of the Cage, and many others; the list of MMA promoters varies substantially over time: As of 2001, there were 83 MMA promoters. By 2009, there were 429. As of 2016, there were 213 MMA promoters associated with Fighters included in the Ranked measure.<sup>306</sup>

112. Under the "Headliner" measure, the Relevant Input Submarket includes each of the top fifteen Fighters in any of the ten major MMA weight classes tracked in the *USA Today/MMA Junkie* rankings, according to the FightMatrix ranking database.<sup>307</sup> There are no close substitutes for Headliners. As explained in Part I.A, MMA promoters rely on top-ranked Fighters at the Top of the Card to draw audiences and viewers to Live MMA Events; for the same reason, fighting at the Top of the Card is the primary career objective for an MMA Fighter. This objective can be achieved only by defeating other highly-ranked Fighters.<sup>308</sup>

113. Additional evidence confirms that Zuffa relies heavily on Headliners to fill the Top of the Card: In 129 of the 159 UFC PPV events from 2005 to May 2017, both of the Fighters at the

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305. FightMatrix notes that "Fighters not in the UFC do not always have access to top competition. This can lead to a gradual decline in rankings," for example, "#33 Ben Askren has gone undefeated in One Championship, but his ranking points have fallen from 376, when he signed, all the way down to 169." Richard Mann, "Ranking Points for Highest Ranked Fighter by Promotion" *FightMatrix* (August 3, 2016).

306. To clarify, not all Fighters affiliated with these promoters are included; only those that are ranked by FightMatrix are in the Relevant Input Market.

307. The FightMatrix rankings are used instead of the *USA Today/MMA Junkie* rankings because the former are consistently available over time.

308. Silva Dep. 129:10-21

); Margules Dep. at 85:17-86:13

Top of the Card were Headliners. At least one of the Fighters at the Top of the Card was a Headliner in 158 of these 159 events.<sup>309</sup> Similarly, a *Sports Business Journal* analysis cited by UFC personnel concluded that:

History tells us that for a pay-per-view to do big numbers, it needs marquee names: Chuck Liddell, Brock Lesnar, Rampage Jackson and Georges St-Pierre. Even if you don't know an arm bar from a rear naked choke, you've probably heard of those four, who from 2006 to today carried the highest pay-per-view averages of any main event fighter in MMA. During that span, those four fighters [] accounted for 17 of the 25 highest-selling pay-per-views. They held 11 of the top 14 slots, eight of the top 10, and six of the seven events that have exceeded a million...Exciting fights and a strong UFC brand can drive ratings and sell tickets, but *sales estimates from the last nine years make it clear that it's the name at the top of the card that sells pay-per-views*...“Stars matter when you look at buys, and that's not exclusive to the UFC,” said Alex Kaplan, vice president of revenue and product marketing at DirecTV, who is responsible for pay-per-view at the company.<sup>310</sup>

The significance of Headliners to Zuffa is further confirmed by Joe Silva's use of consensus rankings in 2011—showing that UFC Fighters accounted for the majority of the top twenty-five and top ten Fighters in each of seven weight classes—to demonstrate the UFC's dominance to Zuffa management.<sup>311</sup>

114. The Headliner measure of the Relevant Input Submarket is conservative because it includes Fighters associated with many non-Zuffa promoters. The list of MMA promoters associated with Fighters included in the Relevant Input Submarket includes Affliction, EliteXC, Gladiator Challenge, King of the Cage, Pancreas, and more than 250 others from 2001 to 2016. As of 2001, there were 47 MMA promoters associated with Fighters included in the Relevant Input Submarket. By 2009, there were 44. As of 2016, only six remained: UFC, Bellator, Invicta, M-1 Global, Titan Fighting Championship, and the World Series of Fighting.

## 2. The Relevant Output Market

115. I define the Relevant Output Market as Live MMA Events in which the participating Fighters are in either the Relevant Input Market (however measured) or the Relevant Input Submarket. In the Relevant Output Market, MMA Promoters are the sellers; their customers include viewers, cable networks, broadcast networks, and sponsors. As in other professional sports, the demand for Live MMA Events is ultimately driven by audience preferences. As explained below, record evidence indicates that Live MMA Events are a separate product market, and that audiences do not view other combat sports (such as boxing or professional wrestling) to be reasonably close substitutes. To the contrary—as Zuffa and third parties recognize—Live MMA Events are perceived as a separate category of sports entertainment, just as games produced by Major League Baseball are separate from those produced by the National Football League.<sup>312</sup> Finally, as explained below, Live MMA Events featuring Fighters not within either the Relevant Input Market or the Relevant Input Submarket are not reasonable substitutes for events in the Relevant Output Market, and are therefore excluded from the Relevant Output Market.

[REDACTED]

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312. See Part III.A.8, *supra* (showing that WME-ING viewed the UFC as a league unto itself prior to acquiring Zuffa, and that Zuffa considers itself a separate league, comparable to MLB, NFL, etc.).

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

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317. Andrew Brennan, *Professional Wrestlers Must Realize They Can't Enter The MMA Or The UFC; It's Not A Scripted Fight*, FORBES, Oct. 31, 2016.

318. Chris Smith, *UFC Vs. WWE: How Much More Is Real Fighting Worth?*, FORBES, July 12, 2016.

320. See ZFL-2614687 at 88.

321. Chris Smith, *UFC vs. WWE: How Much More Is Real Fighting Worth?*, FORBES, July 12, 2016.

[REDACTED]

119. Finally, Live MMA Events featuring Fighters outside the Relevant Input Market are not reasonable substitutes for Zuffa events. Non-Zuffa MMA promoters are poor substitutes to Zuffa from the perspective of Fighters.<sup>324</sup> The same holds true from the perspective of audiences: As explained in Part III.C.1 (below), non-Zuffa promotions lack access, among other things, to [REDACTED]<sup>325</sup> which makes them inferior substitutes from the perspective of audiences. It bears emphasis that this definition of the Relevant Output Market is conservative, for the same reason that my definition of the Relevant Input Market is conservative: Events promoted by even the most prominent non-Zuffa promoters are distant substitutes for Zuffa.

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322. DB-ZUFFA-00006389 at 392.

323. *See, e.g.*, Merger Guidelines §4.1.1 (showing that product markets are defined using substitutes, not complements).

324. *See* Parts III.A.1; III.A.8, *supra*.

325. DB-ZUFFA-00006389 at 392.

### 3. The Relevant Geographic Market

120. According to basic principles of antitrust economics, the Relevant Geographic Market is defined using a SSNIP test directly analogous to that used in product market definition.<sup>326</sup> In the case of geographic markets, the SSNIP test asks whether a hypothetical monopolist within a given geographic region could profitably impose a small but significant and non-transitory increase in price above competitive levels—or, in the case of a monopsonist, a decrease in the price (or wage) below competitive levels.

121. With respect to the Relevant Output Market, I define the relevant geographic market as encompassing Live MMA Events in the Relevant Output Market broadcast in North America. Viewer substitution outside of the North American market is limited by time-zone differences,<sup>327</sup> as well as by local or regional fan bases, which drive demand for Live MMA Events.<sup>328</sup> Victor Cui, CEO and owner of ONE Championship, an MMA promoter based on Singapore, stated in a 2016 interview that “UFC has got a 90-percent market share in the [United] [S]tates. We’ve got a 90-percent market share in Asia... [W]e’ve catered to our audience—the

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<sup>326</sup> *Merger Guidelines* §4.2.

Asian MMA fans who have been pinning for authentic Asian MMA action and on a world-stage[.]”<sup>329</sup> Conversely, Cui stated in another interview that Fighters in the mold of UFC superstar Conor McGregor were not suited to the Asian market.<sup>330</sup>

122. Starting with a single event in 2011, ONE Championship has grown rapidly in Asia, and is scheduled to host 24 events in 2017.<sup>331</sup> Its website touts its “90% market share in Asia,”<sup>332</sup> “90% of the best world champions and fighters in Asia,”<sup>333</sup> and claims an “avid MMA fan base across top Asian markets” of approximately 563 million.<sup>334</sup> As ONE Chairman Chatri Sityodtong stated in an interview, “[w]e are focused on unearthing the greatest martial arts stars in each country, so every country has a world champion, one of the best martial artists in the world to root for that really links to their own history, heritage and their values....”<sup>335</sup> Sean Shelby, a matchmaker with the UFC, also stated that fight promotions in Asia could have “their own set of

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329. James Edwards, *ONE Championship and UFC is the story of East and West in the MMA market*, INDEPENDENT, April 19, 2016 (“UFC has got a 90-percent market share in the [United] [S]tates. We’ve got a 90-percent market share in Asia...[W]e’ve catered to our audience - the Asian MMA fans who have been pinning for authentic Asian MMA action and on a world-stage, to be showcased in front of potentially a billion viewers worldwide.” When Cui referenced “the 1 billion viewers, he was speaking in part about the new TV deal they [ONE FC] announced last weekend with the largest TV broadcaster in the Philippines, ABS-CBN.”).

330. Nick Baldwin, *CEO Victor Cui explains why Conor McGregor isn’t suitable for ONE Championship*, BLOODY ELBOW, May 22, 2017, available at <http://www.bloodyelbow.com/2017/5/22/15677574/ceo-victor-cui-explains-why-conor-mcgregor-isnt-suitable-for-one-championship-mma-ufc-news> (“A big part of what drives the spirit of ONE Championship is really just the belief that martial arts makes the world a better place. Of course want it to be successful business, of course we want to continue to grow in a successful business enterprise. That philosophy of we’re making the world a better place permeates throughout the entire organization. I think it’s something our fans really appreciate in Asia.”). According to ONE Championship chairman Chatri Sityodtong, McGregor’s demeanor could be problematic for an Asian promoter. *Id.* (“Let’s say we had a press conference in China and he [McGregor] threw a water bottle, I would go to jail. They’d put me in jail. I’m not kidding around.”).

331. See Tony Mogan, *ONE Championship: Asia’s MMA powerhouse plays up its differences to UFC in battle for supremacy*, INTERNATIONAL BUSINESS TIMES, Jan. 21, 2017 (“UFC’s 4bn takeover symbolised the huge rise in MMA in 2016 but that growth has not spread to the East. In 2014, they held five events in the continent. In 2015 it shrunk to three. In 2016, it was just one. None are on the horizon for 2017. ONE, meanwhile hosted a single event in 2011 while in 2017 it will be 24.”).

332. See <https://onefc.com/about-one/>.

333. *Id.*

334. *Id.*

335. See Mogan, *supra*.

stars.”<sup>336</sup> Similarly, Joe Silva testified that foreign Fighters must compete in the United States before they can achieve stardom here, and that there exist different fan bases in different geographies, with differentiated preferences.<sup>337</sup>

123. A hypothetical monopolist imposing a SSNIP on Live MMA Events in the Relevant Output Market broadcast within North America would not be constrained by viewer substitution to Live MMA Events broadcast outside of North America. For example, although the price of a UFC PPV event broadcast in North America is in the range of \$50 or more, ONE Championship has sold online access to its own PPV events in North America for \$9.99, beginning at least as early as 2013,<sup>338</sup> and continuing into 2017.<sup>339</sup> That Zuffa can charge North American customers at least five times as much as One Championship indicates that the Relevant Geographic Market for Live MMA Events is not global.<sup>340</sup> ONE Championship has made only limited inroads outside Asia; it

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336. Deposition of Sean Shelby, April 12, 2017, at 195:9-196:19. (“Q: In what way [is Pancrase different from promotions like RFA]? A: I would say it’s a bit different in that, you know, it’s a fight promotion based out of Japan rather than something out of, you know, this part of the world, North America. Q: So the difference between Pancrase and RFA is geographic? . . . THE WITNESS: Yeah, no, I didn’t – it would be a little bit different, because they could have their own set of stars over there that drive it, and so they might have a fighter that’s worth something to them. I don’t know, but in that area. And so again, when we talked about earlier, stars come in all different shapes and sizes, and over there they might have somebody that’s a star to them. So it’s a little bit different thing.”).

337. Deposition of Joseph Silva at 52:12-20 (“Q. So in your opinion, American fans are all things equal more interested in fighters that are known to Americans?...THE WITNESS: I think that’s wherever you’re at. I think in Japan they’re more interested in the fighters in Japan. You’re interested in who you’re familiar with until you become familiar with them.”). *See also* Silva Dep. at 42:7-13 (“A. ...if you only fought in Japan, you were not a big name to anybody in the United States”); *id.* at 294:4-8 (“Q. I see. And success, say, in China or the Philippines wouldn’t translate to U.S.; is that right? A. Correct or Korea or anywhere else it’s all very specific. Q. So the business and the industry is very culture or country specific in your opinion? A. Yeah, it can be.”).

338. Riley Kontek, *4 Reasons MMA Fans Should Pay Attention to One FC*, BLEACHER REPORT, May 30, 2013 (“With UFC pay-per-views hovering around the \$50 range, wouldn’t it be nice to get a high-quality pay-per-view streaming live for something more affordable to the average Joe? Well, One FC will be running its pay-per-view this weekend for \$9.99 from their website.”).

339. *See* <https://onefc.com/livestream/> (“Catch all the events live with ONE Championship’s official livestream. Purchase the HD livestream now at only US\$9.99 (service charges apply). Replays are available up till 14 days after the conclusion of the live event. ONE: KINGS OF DESTINY livestream starts at 8.30PM, Manila time [8:30AM EDT] (Main card).” (accessed April 19, 2017)).

accounts for just one out of 165 top-ranked MMA listings in the *USA Today/MMA Junkie* ratings.<sup>341</sup>

124. With respect to the Relevant Input Market and Submarket, I define the relevant geographic market as North America. As explained above, although ONE Championship is outside of the Relevant Geographic Market, I conservatively include it in the Ranked measure of the Relevant Input Market.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

341. See <http://mmajunkie.com/rankings> (accessed April 18, 2017).

343. *Id.*

344. *Id.*

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

127. ONE Championship also offered itself as a “feeder organization to UFC,” indicating that ONE Championship did not see itself as a direct competitor to Zuffa.<sup>348</sup> Furthermore, a Zuffa Executive Vice President and managing Director of UFC in Asia was quoted in May 2013 as saying that he did not view ONE Championship as a competitor, but instead as a minor league helping to increase interest in the sport.<sup>349</sup> Thus, the extent to which Fighters perceive ONE Championship to be a competitive alternative purchaser of Fighter services is dubious. Nevertheless, although ONE Championship is outside of the Relevant Geographic

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345. *Id.*

346. Shaun Al-Shatti, *ONE Championship’s Victor Cui: ‘We’ve gotten a lot of interest’ since UFC-Reebok deal*, MMA FIGHTING, May 21, 2015.

347. Richard Mann, *Ranking Points for Highest Ranked Fighter by Promotion*, FIGHTMATRIX. Aug. 3, 2016. See also Shaun Al-Shatti, *Where in the world has Ben Askren been? Well, it’s complicated...* MMA FIGHTING (April 28, 2017) (“When Ben Askren signed with ONE Championship in late 2013, he was widely considered to be one of the most talented welterweight fighters in the world. He quickly did what many observers expected him to do, too, blitzing through back-to-back opponents to capture the ONE welterweight title with ease by mid-2014. But these days, nearly three years after he became ONE’s welterweight king, Askren still has yet to defend his belt in any official capacity, and not for a lack of trying.”).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Market, as noted above, I conservatively include ONE Championship in my Ranked measure (the broadest measure of the Relevant Input Market).

#### 4. Zuffa's Dominant Share in The Relevant Input Market and Submarket

128. To calculate Zuffa Fighters' share of the Relevant Input Market and Submarket (or Zuffa's share as a buyer), I divided the number of Zuffa's MMA Fighters by the total number of MMA Fighters in the Relevant Input Market and Submarket. Fighters in the Relevant Input Market were weighted by their associated promoters' PPV and gate revenues per Fighter, to reflect differences in the average quality of Fighters across different MMA promoters.<sup>350</sup> Using unweighted Fighter counts makes little economic sense, given that Fighters (even within the defined Relevant Input Market and Submarket) are not homogeneous, and instead vary in their ability to attract viewers—and hence their value to an MMA promoter. For the Relevant Input Submarket, I also calculate an alternative metric in which Fighters are ranked by the inverse of their rank according to FightMatrix.

129. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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350. This approach is conservative because revenue data are available only for (relatively) large non-Zuffa MMA promotions such as Bellator and Strikeforce, so that Fighters from smaller promotions (which lack such data) receive the same weight as if they were affiliated with a larger promotion. Using public sources, I constructed a database of PPV revenue and gate revenue by promoter. Zuffa Fighters were weighted by the average revenue per Zuffa Fighter. Non-Zuffa Fighters were weighted by the average revenue per Fighter for non-Zuffa promoters. In the case of ONE Championship, I conservatively assigned Fighters a weight equal to 25 percent of Zuffa Fighters' weight, in light of evidence that ONE's valuation was reportedly "approaching" a valuation of \$1B at approximately the same point in time that Zuffa sold for \$4B. *See* Appendix 2 for details. *See also* James Goyder, *ONE Championship receives multimillion dollar investment from Singapore fund*, MMA MANIA, July 14, 2016 ("[T]he company is on course for a billion-dollar valuation...The UFC was sold for \$4 billion to a group led by WME-IMG and ONE Championship is on course for an IPO in the next 12 to 18 months.").

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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351. [REDACTED]

**5. Zuffa's Dominant Share in The Relevant Output Market**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

353. These figures are conservative because they are limited to Zuffa's event revenue for events in North America, and exclude all non-event-specific sponsorship revenue, which Zuffa does not disaggregate by geographic region. At the same time, the data reflect all revenue recorded for Strikeforce and Bellator, regardless of source.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### 6. Natural Barriers to Entry

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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354. See John Nash, *Why do boxers make more than MMA fighters?*, BLOODY ELBOW, Aug. 23, 2016.

355. DB-ZUFFA-00006389 at 96.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## **7. Artificial Barriers to Entry**

133. Artificial barriers to entry are those that for would-be entrants seeking to compete with Zuffa incur as a result of the Challenged Conduct As explained in Part III.C.1 below, the Challenged Conduct has denied rivals access to the Fighters necessary to compete effectively with the UFC. Accordingly, the Challenged Conduct is an artificial barrier to entry and expansion.

## **8. Market Participants and Observers Viewed Zuffa As Dominant**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

361. Silva testified that “if you gave [former two-time Bellator Lightweight Champion Eddie] Alvarez the shot and [UFC Lightweight Champion Benson] Henderson slipped on a banana peel and lost you will have given Bellator

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

135. Other promoters disavow any attempt to compete directly with Zuffa. In an investor prospectus dated September 2, 2016, Alliance MMA (formed through acquisitions of regional promoters) states that “[u]nder the Alliance MMA umbrella, we expect that our regional MMA promotions will identify and cultivate the next generation of UFC and other premier MMA promotion champions....”<sup>364</sup> The Alliance prospectus clarifies its status as a “developmental organization” that explicitly avoids even the appearance of direct competition with a “premier national promotion,” (namely, the UFC):

[I]t is our intention to serve as a developmental organization for the UFC and other premier national MMA promotions in the same fashion as college athletic programs serve as “feeders” to professional sports leagues] ... [s]hould the UFC or another premier national MMA promotion view us as a threat they could use their significantly greater resources to frustrate our business and growth strategy and materially and adversely affect our business.<sup>365</sup>

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the greatest Christmas present of all: Bellator’s champ would jump from number ten to number one. Even just giving their former champion an immediate title shot puts Bellator on a level they don’t deserve.” Silva Dep. at 216:21-217:5; Silva Exh. 16. He further explained that would “benefit Bellator” because “every promotion wants to be able to claim to be number one, to claim that you have the best fighters. That gives some teeth to that claim.” *Id.* at 220:8-12.

362. In an interview with FanHouse in December 2009, Dana White said “Let me ask you a question ... Do you think that there’s any guy we can’t get that we want? Other than Fedor [Emelianenko]?...But everyone else that we’ve wanted, we got.” ZFL-2461790 at 90. Feb. 12, 2011 email from Joe Silva to Dana White, subject line, “We Own MMA”, lists the MMA rankings from USA Today/SB Nation Consensus Rankings, which presents the top 25 Fighters in MMA for the seven major weight classes, and lists the ratio of top Fighters in each weight class controlled by Zuffa. ZUF-00085896. ZFL-2559292, 2010, Dana White news article quote noting that “other promotions...are not deep enough. There are not enough good fighters over there for them to challenge. There is here [the UFC], that’s what makes it fun and interesting.”

363. DB-ZUFFA-00006389 at 439.

364. [http://www.nasdaq.com/markets/ipos/filing.ashx?filingid=11067618#V448288\\_424B1\\_HTM\\_A\\_003](http://www.nasdaq.com/markets/ipos/filing.ashx?filingid=11067618#V448288_424B1_HTM_A_003)

365. *Id.*

[illegible]

368. *Two-division WSOF champ David Branch relinquishes titles, heads to free agency*, MMA JUNKIE, Feb. 6, 2017; *see also* Steve Juon, *Former WSOF dual-weight champion David Branch re-signs with UFC*, MMA MANIA, Feb. 15, 2017.

369. Steve Juon, Justin Gaethje tests free agency, but WSOF still holds matching rights, MMA MANIA, Mar. 30, 2017; *see also* John Morgan, Justin Gaethje on new UFC deal: “Now I get a chance to prove I’m the best in the world.” MMA JUNKIE, May 5, 2017; Mersch V.I Tr. 93:1-6 (stating that Justin Gaethje, who was a World Series of Fighting Champion in his weight class, left the World Series of Fighting for the UFC).

[illegible]

370. Fighters that can no longer compete in (or are simply “cut” from) the UFC often end up in other “minor league” promotions. For example, Jeff Aronson of Titan FC explained that “No one is going to take on Zuffa and win at this point. It’s just not going to happen, and I have no aspirations to do that. I am very happy to do that carving my place and my niche giving young fighters the best platform in the world to shine on, and giving vets the opportunity to come and shine.” *See also* Aronson Dep. at 31:10-32:4; ZFL-1112933 at 33 (“Bellator has old ex UFC fighters that are way past their prime.”); Ethan Finkelstein, *WSOF New PPV Model to Award 50 Percent to Fighters*, FANSIDED, Sept. 23, 2014 (“Considering that World Series of Fighting’s biggest names are currently former UFC contenders (notice how I did not say champions), the situation looks bleak for now.”).

371. WME-ZUFFA-00001150 at \*7.

372. *Id.*

373. *Id.*

374. *Id.*

375. *Id.*

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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376. John Morgan, *Dana White stands by 'pay for rankings' claim, says UFC is the NFL of MMA*, MMA JUNKIE, June 14, 2010, available at <http://mmajunkie.com/2010/06/dana-white-stands-by-pay-for-rankings-claim-says-ufc-is-the-nfl-of-mixed-martial-arts>.

377. See ZUF-00395941.



378. Zuffa's Response to Plaintiffs' Request for Admission No. 17.

379. Zuffa's Response to Plaintiffs' Request for Admission No. 32.

[REDACTED]

[illegible]

382. DB-ZUFFA-00006389 at 98.

383. Moody's Investors Service, "Announcement: Moody's Changed Zuffa LLC's (d/b/a Ultimate Fighting Championship or UFC) Rating Outlook to Positive from Stable," (December 1, 2010), *available at* [https://www.moodys.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR\\_210184](https://www.moodys.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184).

385. *Id.* at 6439.

140. In summary, the combination of dominant market shares and barriers to entry allows me to conclude that Zuffa has significant monopoly power in the Relevant Output Market and monopsony power in the Relevant Input Market and Submarket.

**9. All Indirect Evidence and Analysis of Zuffa's Market Power Is Common to the Classes**

141. All of the indirect evidence of Zuffa's market power, and my analysis of it, is common to the Classes as a whole. If I were asked to analyze indirect evidence of market power for any single member of either Class, the evidence and analysis would be the same.

**B. Direct Evidence of Zuffa's Market Power**

142. The direct evidence reviewed here demonstrates that Zuffa has monopoly power over Live MMA Events and monopsony power with respect to its Fighters. Direct evidence of monopsony power includes evidence of Zuffa's ability to profitably suppress Fighter compensation, and to restrict the supply of Fighter services. Direct evidence of Zuffa's monopoly power includes evidence of Zuffa's ability to profitably exercise its pricing power over Live MMA Events, and to restrict the supply of Live MMA Events. Finally, there is direct evidence of Zuffa's ability to exclude or impair rivals or potential rivals.

**1. Direct Evidence of Power to Suppress Fighter Compensation Below Competitive Levels**

143. The ability to suppress compensation below competitive levels constitutes direct evidence of Zuffa's substantial market power, and in particular, monopsony power. In Part III.D below, I use regression analysis to show that there is a negative relationship between Fighter compensation (measured as a share of event revenues) and the extent to which Zuffa's long-term exclusive contracts foreclosed its Fighters from rivals (a measure of Zuffa's market power). This analysis shows that, as the share of Fighters (key inputs to an MMA promotion) foreclosed by Zuffa increases, Zuffa is able to pay its Fighters a lower share of its event revenues. The result is

highly significant in both a statistical and an economic sense, and the result holds after controlling for a wide range of factors that may also influence Fighter compensation. Nothing in the record indicates that Zuffa suffered significant Fighter defections as a result of reducing the share of revenue paid to Fighters, suggesting that its exercise of monopsony power was profitable.

144. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## **2. Direct Evidence of Power to Restrict the Supply of Fighter Services.**

145. The ability to restrict the supply of Fighter services below competitive levels constitutes additional direct evidence of monopsony power. Zuffa restricted the supply of Fighter services by consistently maintaining significantly more Fighters under contract than it could use, creating forced periods of inactivity during which Fighters were not paid and were not available to other MMA promoters to fight. In addition, Zuffa pursued a strategy of restricting the number of career paths available to Fighters.<sup>388</sup>

146. If Zuffa lacked monopsony power, the excess Fighters on Zuffa's roster could have earned income from other promoters, rather than being bound to Zuffa during periods of forced inactivity (during which they did not get paid). Similarly, in the absence of monopsony power,

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387. See Part III.D.3, *infra*.

388. See Part III.D.4, *infra*.

Zuffa could not have restricted Fighter career paths, because Fighters would have defected to other MMA promoters.

### 3. Direct Evidence of Power Over Pricing of Live MMA Events

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### 4. Direct Evidence of Power to Restrict the Supply of Live MMA Events

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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389. See Part III.D.5, *infra*.

390. See Figure 1, *supra*; Parts III.D.5-6, *infra*.

391. Bellator put on a single PPV event in 2014. See <https://www.bloodyelbow.com/2017/6/25/15870964/spike-executive-bellator-nyc-the-first-of-many-ppv-events-running-mma-news> (stating that Bellator's debut PPV event was in 2014; Bellator hosted its second-ever PPV event in June 2017). In contrast, Zuffa put on 12 PPV events in 2014.

[REDACTED]

[REDACTED]

[REDACTED]

#### **4. Direct Evidence of Power to Exclude Rivals**

149. Access to a broad stable of high-quality MMA Fighters is essential to stage successful MMA events in the Relevant Output Market. The Challenged Conduct blocked Zuffa's would-be rivals from access to this critical input, and also impaired rivals in other ways. In this way, the Challenged Conduct guaranteed that would-be rivals would not pose a significant competitive threat to Zuffa.<sup>393</sup> Some of these would-be rivals have been acquired by Zuffa, others have gone out of business, and others have been relegated to feeder leagues.<sup>394</sup> Both Zuffa and third parties recognize that the Challenged Conduct has been so successful in excluding rivals that Zuffa has no close competitors remaining in the market today.<sup>395</sup> The revenues and market shares of other MMA promoters are trivial in comparison to those of Zuffa.<sup>396</sup>

150. In summary, the direct evidence reviewed above allows me to conclude that Zuffa possesses and has exercised monopoly and monopsony power.

#### **5. All Direct Evidence and Analysis of Zuffa's Market Power Is Common to the Classes**

151. All of the direct evidence of Zuffa's market power, and my analysis of it, is common to the Classes as a whole. If I were asked to analyze direct evidence of market power for any single member of either Class, the evidence and analysis would be the same.

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392. See Part III.D.6, *infra*.

393. See Part III.C.1, *infra*.

394. See Parts II.A.1; III.A.1; III.A.8, *supra*.

395. See Parts III.A.1; III.A.4-5; III.A.8, *supra*.

396. See Parts III.A.4-5, *supra*.

**C. The Challenged Conduct Substantially Foreclosed Competition**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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397. See, e.g., *Salop, supra*, at 376; see also Elhauge at 321-322.

398. See HERBERT HOVENKAMP, XI ANTITRUST LAW ¶1821, at 152, 160, 164-65 (1998). See also Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 469 (2009) (“it makes sense (when effects are not directly proven) to require the same 20-30% foreclosure share threshold that is required to infer anticompetitive effects from exclusive dealing”).

399. *ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254, 277 (3d Cir. 2012) [hereafter “*ZF Meritor v. Eaton*”].

[REDACTED]

[REDACTED]

[REDACTED]

155. *Fourth*, I understand that courts may also consider evidence that the dominant firm engaged in coercive behavior, and (relatedly) evidence on the ability of customers to terminate the contracts.<sup>400</sup> These conditions are also satisfied, given (1) Zuffa's ability to exploit provisions in Fighter contracts to retain virtually any Fighter it desired; and (2) the fact that Zuffa's Fighter contracts contain one-way ratchets, giving Zuffa unilateral authority to bind Fighters to exclusive terms or to cut them.

**1. The Challenged Conduct Blocked Rivals from Access to Key Inputs Necessary for a Successful MMA Promotion**

156. As explained in Parts I.A and III.A.1, MMA promoters rely on Headliners at the Top of the Card to draw audiences and viewers to Live MMA Events. Of course, access to a single Headliner would be insufficient for even a single bout; MMA promoters need access to competitive pairings of Fighters. (In economic terms, Fighters are perfect complements in the MMA bout production function.) Nor would access to a single pair of Headliners be sufficient: To produce a stream of successful Live MMA Events over time, multiple pairings of Headliners are obviously necessary. Further, not all Headliners can be matched against each other. For example, a heavyweight Fighter cannot be matched against a lightweight.<sup>401</sup> Even two Headliners of the same

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<sup>400</sup>. *Id.*

[REDACTED]

weight class may be a poor match if there is too much disparity in their relative rankings, or if they have fought each other too recently.<sup>402</sup> As one review of the existing literature observes,

Superstars in the UFC don't always draw high numbers; they need a competitive opponent in order to garner the desired high buy rates. Anderson Silva, one of the UFC's more popular champions, drew only 300,000 buys in a squash match against Patrick Cote, but drew 725,000 buys facing a much more threatening Vitor Belfort.<sup>403</sup>

157. Moreover, because Fighters become Headliners by defeating other Headliners, access to a stable of Headliners allows a promotion to create new Headliners. More generally, the list of Headliners is fluid over time, with Fighters' relative rankings shifting constantly with the outcome of bouts, Fighter inactivity, injuries, retirement, and so on.<sup>404</sup> Therefore, access to a sufficiently broad pool of top-level Fighters (who have the potential to become Headliners) is also important to create and sustain a profitable MMA promotion capable of competing with the UFC.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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402. See, e.g., Silva Dep. 95:18-24 (“Q. [H]ow would you describe or define the term ‘contender’? A. That if you have rankings as we have for some while now, it’s whoever the higher ranked fighters are who have not recently fought the person who is already champion, would be the highest available contenders.”); *id.* at 94:25-95:13 (“Q. Now, is it fair to say that if you have a top-ranked fighter on your roster, you want to try to have that top-ranked fighter fight someone who is at least close to that fighter in rank? A. Yes, ideally. Q. And one of the reasons for that is to create a competitive match-up; is that right? A. Yes. Also to help create more consensus contenders. When people go, well, who should fight for the title next, well, if you go, these two high-ranked guys fought each other, and this was the victor, it would make sense for him to... get a title shot soon.”).

403. McGowan & Mahon, *supra*, at 1036.

404. For example, the FightMatrix and USA Today/MMA Junkie rankings are generally updated weekly or biweekly. See <http://mmajunkie.com/category/mma-rankings> (generally showing biweekly updates); see also <http://www.fightmatrix.com/faq/> (“We usually update every Sunday or Monday.”).

406. WME-ZUFFA-00013978.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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407. *Id.*

[REDACTED]

[REDACTED]

410. *Id.* at 55.

411. ZFL-1055607 at 613.

412. Moody's Investors Service, "Announcement: Moody's Changed Zuffa LLC's (d/b/a Ultimate Fighting Championship or UFC) Rating Outlook to Positive from Stable," (December 1, 2010), *available at* [https://www.moody's.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR\\_210184](https://www.moody's.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184) ("Moody's Investors Service changed Zuffa, LLC's (Ba3 Corporate Family Rating) rating outlook to positive from stable. 'The rating outlook change is prompted by Zuffa's continued strong revenue and EBITDA growth trends worldwide,' stated Neil Begley, a Senior Vice President at Moody's Investors Service. It is also based

upon improving credit metrics, and the increasing mainstream acceptance of the sport of mixed martial arts' (MMA) popularity and particularly so for industry leading UFC, in Moody's view. Zuffa's Ba3 CFR, Probability of Default Rating (PDR) and bank facility rating remain unchanged. Zuffa's Ba3 CFR reflects its premium MMA platform and UFC brand, sturdy credit metrics, strong free cash flow and superlative international revenue growth prospects. The rating considers the benefits from the growing popularity of UFC, and its scale, brand strength and breadth of fighters under multi-year contracts which help serve as an effective barrier to entry. The rating is also impacted by Zuffa's relative large scale in MMA, its first mover advantage of bringing structure to the sport, its large contractually bound pool of fighters with superior opportunities for exposure and profit....").

419. Josh Gross, Cuban sees bright future for MMA, ESPN, (September 13, 2007), *available at* <http://www.espn.com/extra/mma/news/story?id=3017701>.

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

420. Viacom buys Bellator, plans 2013 start on Spike, USA TODAY, (October 26, 2011), *available at* <https://usatoday30.usatoday.com/sports/mma/post/2011-10-26/viacom-buys-bellator-plans-2013-start-on-spike/558003/1>



The image shows a document page that has been almost entirely redacted with a large black box. Only a few horizontal white lines are visible, which appear to be remnants of text or table borders. On the far left edge, there are several small, white rectangular marks that look like staple marks or punch holes. No legible text or specific data is present.

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[REDACTED]

[REDACTED]

[REDACTED]

163. The acquired rosters included several highly ranked Fighters. As seen in Figure 1 of Part III.A.1, Zuffa's share of the Headliner Submarket has increased steadily in the wake of the Strikeforce acquisition, to more than 80 percent. According to FightMatrix, Zuffa has accounted for at least fourteen of the top fifteen pound-for-pound Fighters worldwide since late 2010.

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425. ZFL-2508355 at 60.

426. ZUF-00447778.

427. Deposition of Kurt Otto, February 6, 2017, at 246:19-247:12.

[illegible]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

\_\_\_\_\_

428. Silva Dep. at 130:12-14.

429. *Id.* at 128:23-129:11

430. See Deposition of Kyle Kingsbury, February 17, 2017, at 119. See also Part IV.B, *supra*.

431. DB-ZUFFA-00006389 at 6397.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[illegible]

438.

**2. The Challenged Conduct Foreclosed a Substantial Share of the Relevant Input Market and Submarket**

167. In this section, I present evidence demonstrating that Zuffa's exclusive contracts with Fighters substantially foreclosed competition. One of my foreclosure metrics is the share of Headliners foreclosed by the Challenged Conduct. Given that Headliners are a critical input for staging successful Live MMA Events, Zuffa's foreclosure of Headliners impairs rivals and enables Zuffa to exercise monopsony power over all Fighters in the Relevant Input Market. However, given the uncertainty in determining which Fighters will become Headliners in the future, it is logical that Zuffa would seek to foreclose a broad pool of top-level Fighters (who have the potential to become Headliners) to ensure continued dominance over time. Indeed, Zuffa's exclusive contracts apply to all of its Fighters, not just the top-ranked Fighters. Accordingly, I calculate Zuffa's foreclosure of the Relevant Input Market (measured both ways), as well as the Relevant Input Submarket.

168. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

169. To measure Zuffa's overall foreclosure of the Relevant Input Market and Submarket, I calculated the ratio of MMA Fighters foreclosed by Zuffa's exclusionary Fighter contracts to the total number of MMA Fighters in the Relevant Input Market (under both measures) and Submarket. As in the market share calculations, Fighter counts are weighted by MMA promoters' average PPV and gate revenue per Fighter.

170. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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439. See HERBERT HOVENKAMP, XI ANTITRUST LAW ¶1821, at 152, 160, 164-65 (1998). See also Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 469 (2009) ("it makes sense (when effects are not directly proven) to require the same 20-30% foreclosure share threshold that is required to infer anticompetitive effects from exclusive dealing").

[REDACTED]

171. Under the second foreclosure definition, I conservatively classify Zuffa Fighters as foreclosed if (1) the Fighter's contract contained a champion's clause (which all or virtually all did), and (2) the contract had a sufficiently long duration of exclusivity.<sup>441</sup> Specifically, Fighters were considered foreclosed if their contracts constrained them from fighting for and/or freely negotiating with other MMA promoters for a period of at least 30 months. This represents an economically significant share (the majority, or, in many cases, the entirety) of a Fighter's professional MMA career, as explained in Part II.C.2 above.

172. The 30-month threshold is conservative given that antitrust scholars have found that exclusive contracts longer than twelve months in duration can have anticompetitive effects, depending on the industry.<sup>442</sup> The 30-month threshold is also conservative given that Zuffa routinely leveraged its bargaining power to induce Fighters to renew their contracts before the prior contract had expired, as explained in Part II.C. For example, a Fighter forced to commit to two sequential contracts of 20 months each is effectively foreclosed for 40 months, but would not be classified as foreclosed under this definition.

173. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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440. See Part III.A.4, *supra*.

441. As explained in Part II.C above, the duration of exclusivity is calculated as the sum of (1) the Term (including the lead-up time to a Fighter's first bout); (2) the option period (if any); (3) the exclusive negotiation period; and, (4) the right to match period.

442. Areeda & Hovenkamp ¶ 1821d3.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### **3. The Duration and Staggering of Zuffa's Contracts Prevented Meaningful Competition by Potential Rivals**

174. As explained in Part II.C.2, the exclusive terms in Zuffa's contracts, combined with Zuffa's leveraging of the Challenged Conduct to renew and extend contracts, allowed Zuffa to prevent rivals from accessing Fighters for a period that was effectively perpetual, relative to Fighters' brief career lengths. Zuffa's top Fighters were bound by even longer-term contracts, and were (like all Fighters) subject to the champion's clause.<sup>443</sup>

175. In addition, Zuffa's contracts were staggered, with different Fighters reaching the end of their contracts at different points in time. This further ensured that other MMA promoters would not have access to a sufficient stable of Fighters at any given time to compete effectively with Zuffa.<sup>444</sup> Indeed, on the few occasions when Zuffa has released Fighters to Bellator that, in Zuffa's view, might have allowed Bellator to stage a successful event, Zuffa has taken care to ensure that suitable opponents were not available to Bellator.<sup>445</sup>

### **4. Zuffa Engaged in Coercive Contracting Behavior and Restricted Fighters' Ability to Terminate Contracts**

176. To an economist, coercion in the context of foreclosure can be thought of as the ability of a dominant firm to induce an economic agent to submit to exclusionary terms, by

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<sup>445.</sup> See Part II.C.1, *supra*.

ensuring that the agent would be made worse off by refusing them.<sup>446</sup> This can be accomplished by exploiting a collective action problem, in which Fighters would be made individually worse off by refusing Zuffa's exclusionary terms, despite the fact that Fighters would be collectively better off if Fighters coordinated in their refusal.<sup>447</sup> By this standard, Zuffa clearly engaged in coercive behavior: As explained in Part II.C.1 above, Zuffa exploits its contract provisions to retain virtually any Fighter it desired, and Fighters agreed to Zuffa's terms because the Challenged Conduct left them no better alternative. Similarly, the Challenged Conduct clearly involved Fighters submitting to terms that asymmetrically restricted their ability to terminate their contracts: As explained in Part II.B.1 above, Zuffa's Fighter contracts contain one-way ratchets, giving Zuffa, but not Fighters, the discretion to continue to enforce exclusivity or to discontinue the contract if Zuffa had no further use for the Fighter. Moreover, Fighters were further restricted in their ability to terminate the exclusive terms governing them, given Zuffa's ability to leverage the Challenged Conduct to renew and extend contracts, explained in Part II.C.1 above.

## **5. All Evidence and Analysis of Foreclosure Is Common to the Classes**

177. All of the evidence and analysis demonstrating that Zuffa foreclosed competition to a significant degree is common to the Classes. If I were asked to analyze foreclosure for any single member of either Class, the evidence and analysis would be the same.

## **D. The Challenged Conduct Generated Substantial Anticompetitive Effects**

178. Given that Zuffa had substantial market power and substantially foreclosed competition, anticompetitive effects would be expected and can be inferred. Nevertheless, in this section, I consider whether there is direct evidence that the Challenged Conduct generated

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446. See, e.g., Ilya Segal & Michael Whinston, *Naked Exclusion: Comment* 90(1) AM. ECON. REV. 296-309 (2000).

447. *Id.*

anticompetitive effects.<sup>448</sup> Evidence of anticompetitive effects includes regression analyses demonstrating that Fighter compensation as a share of event revenue declines as Zuffa's foreclosure share increases, after controlling for other factors that might influence Fighter compensation. Additional evidence of anticompetitive effects includes evidence that the Challenged Conduct restricted the supply of Fighter services in the Relevant Input Market and Submarket, and (relatedly) the supply of Live MMA Events in the Relevant Output Market, in addition to raising prices in the Relevant Output Market.

179. I understand that some courts have found that the anticompetitive effects of the conduct at issue should be "considered in light of any procompetitive effects."<sup>449</sup> As explained in Part VII below, the purported procompetitive justifications that Zuffa has proffered for the Challenged Conduct in prior proceedings are unavailing. To the contrary, the experience of other professional sports leagues suggests that halting (and remediation) of the Challenged Conduct would benefit Fighters, consumers, and the industry as a whole.

**1. Regression Models Show Bout Class Compensation Share Is Negatively Correlated with Zuffa's Foreclosure Share, Implying That Increased Foreclosure Share Causes Decreased Compensation Share**

180. For the Bout Class, I estimated multivariate regression models in which the dependent variable to be explained is the share of event revenue received by a given Fighter at a given event, while the key independent variable of interest is Zuffa's foreclosure share. For any given bout in any given event, the total compensation each Fighter in the Bout Class receives can be decomposed into four categories; these are (1) show and win purses, (2)

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448. Salop, *supra*, at 376; 383 ("In the RRC foreclosure paradigm, the ultimate antitrust concern is not the harm to the rivals, but rather the possible harm to consumers and competitive process from the resulting market power.").

449. *ZF Meritor v. Eaton* at 24.

discretionary/performance pay, (3) PPV royalties, and (4) letters of agreement.<sup>450</sup> I define a Fighter's total event-level compensation ("Event Compensation") as the sum across these four categories.

181. The dependent variable in my regression model ("Fighter Share") is equal to the share of Zuffa's event-specific revenue ("Event Revenue")<sup>451</sup> paid to a given Fighter that participated in a given event at a given point in time. Zuffa's Event Revenues include revenues from ticket sales, PPV and broadcasting fees, and other event-specific revenue streams. The regression data set includes Fighter Shares for both Zuffa Fighters, and for Strikeforce Fighters prior to Zuffa's acquisition of Strikeforce.<sup>452</sup>

182. The regression model can be written as follows:

$$S_{ijt} = \beta_0 + \beta_i + \beta_1 D_{jt}^z FS_{jt} + \beta_2 Win_{ijt} + \beta_3 HasRank_{ijt} + \beta_4 Rank_{ijt} + \beta_5 LOA_{ijt} + \beta_6 PPV_{ijt} + \sum_k \lambda_k X_{ijt}^k + \varepsilon_{ijt} \quad (1.1)$$

Above,  $S_{ijt}$  is the Fighter Share, equal to the ratio of each Fighter's Event Compensation to Event Revenue for Fighter  $i$  participating in event  $j$  at time  $t$ . The key variable of interest,  $FS_t$ , is the share of the Relevant Input Market or Submarket foreclosed by Zuffa as of time  $t$ . As explained in Part III.C above,  $FS_{jt}$  is defined as the ratio of MMA Fighters foreclosed by Zuffa's exclusionary contracts to the total number of MMA Fighters in the Relevant Input Market or Submarket, with

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450. See Part I.B, *supra*; see also ZFL-0000003 (Zuffa Fighter compensation table).

451. The Event Revenues used in my regression analysis were calculated using Zuffa's P&L statements, and include Ticket Sales/Site Fees PPV/Broadcast Sales/Fees (including "Web Buys" and "Other"), event-specific Merchandise, and event-specific Sponsorships.

452. The Appendix describes the construction of the regression data set, which makes use of all available data from Zuffa at a sufficiently granular level to conduct my regression analysis, including the Strikeforce pre-acquisition data produced by Zuffa. As explained below, the Strikeforce pre-acquisition data provide a benchmark for the share of revenue that Fighters would receive in the but-for world.

Fighters weighted by PPV and gate revenues to reflect differences in the average quality of Fighters across different MMA promoters.<sup>453</sup>

183. [REDACTED]

*D*<sub>it</sub>

[REDACTED]

[REDACTED]

*P*

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

*P*

[REDACTED]

[REDACTED]

[REDACTED]

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453.

[REDACTED]

45

[REDACTED]

||

184. The remaining variables in equation (1.1) above control for other factors that may influence Fighter-compensation shares. The term  $\beta_i$  denotes Fighter-specific fixed effects, which control for all individual, Fighter-level attributes that remain constant over time. The variable  $Win_{ijt}$  is an indicator equal to one if the Fighter won the bout (and thus received the win purse), and zero otherwise. The variable  $HasRank_{ijt}$  is an indicator equal to one if FightMatrix records a ranking for Fighter  $i$  at the time of event  $j$ , and zero otherwise. The variable  $Rank_{ijt}$  is an integer corresponding to the Fighter's rank; it is set equal to zero for non-ranked Fighters. The variables  $LOA_{ijt}$  and  $PPV_{ijt}$  are indicators equal to one if the Fighter was entitled to additional compensation pursuant to a Letter of Agreement or an agreement to receive PPV royalties, and zero otherwise.

185. [REDACTED]  $X_{ijt}$  [REDACTED]

$X_{ijt}$  [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

455. See, e.g., <http://www.fightmetric.com/fight-details/ea8eaf881d38713e>.



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

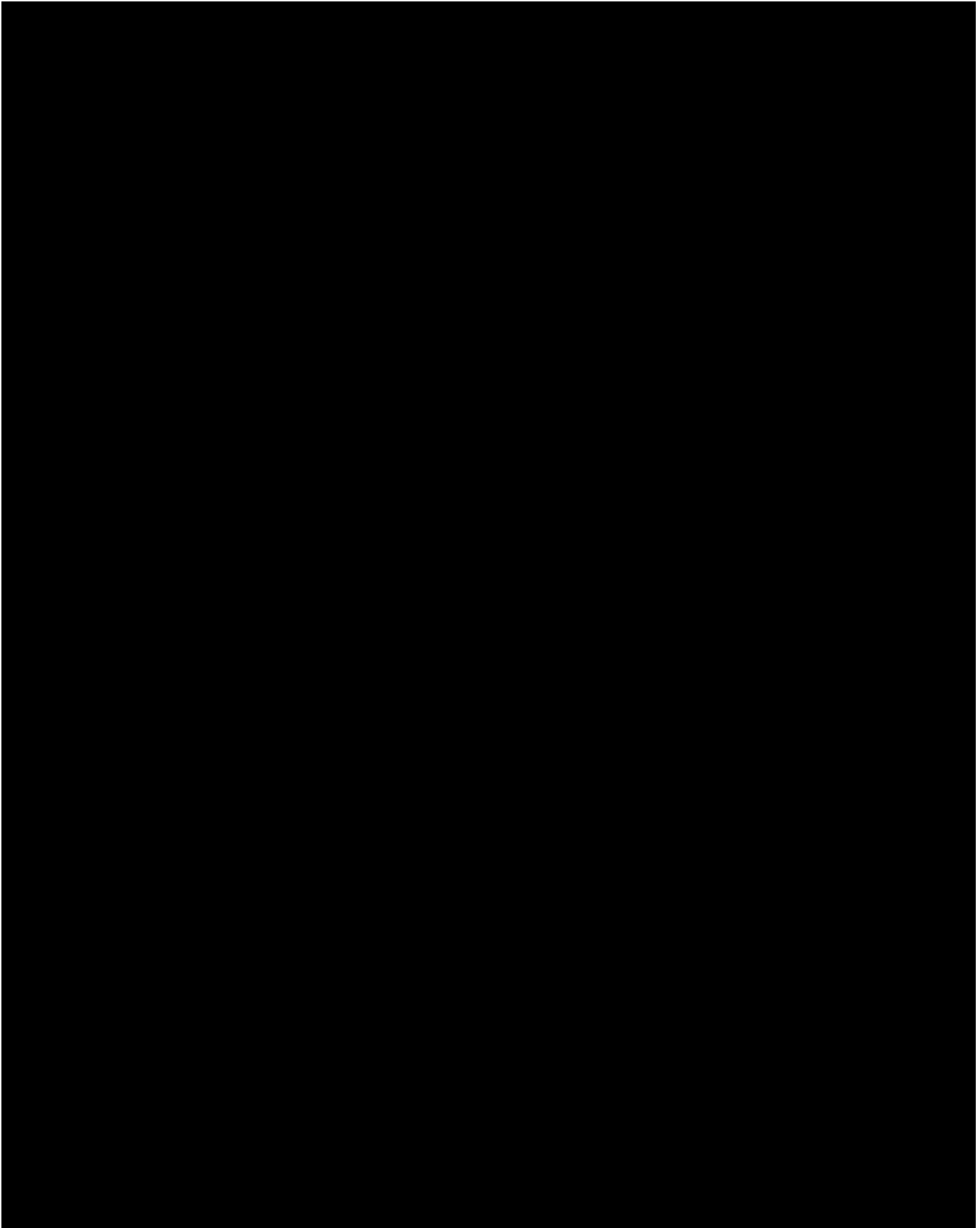
[REDACTED]

[REDACTED]

[illegible]

456. This measure of economic harm is conservative because it measures only the exclusionary effects of Zuffa's Fighter contracts, and not the exclusionary effects of other aspects of the Challenged Conduct reviewed in Parts II.A and II.B above. As a result, this measure of economic harm is appropriate regardless of whether the other conduct is found to be anticompetitive. Put differently, even if the Challenged Conduct consisted solely of Zuffa's exclusionary contracts, my analysis of foreclosure analysis the resulting estimates of economic harm would remain the same.

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## **2. Additional Evidence Shows That the Challenged Conduct Suppressed Fighter Compensation Below Competitive Levels**

188. As explained below, additional evidence that the Challenged Conduct suppressed Fighter compensation below competitive levels includes: (1) evidence that Zuffa has reduced the share of revenue paid to Fighters over time (as the degree of foreclosure rose); (2) evidence that Zuffa pays a significantly lower share of its revenues than Strikeforce (before the acquisition) or Bellator; and (3) a natural experiment in which Zuffa unilaterally restricted compensation of its Fighters by imposing a new sponsorship tax. In the absence of the Challenged Conduct, Zuffa's ability to suppress Fighter compensation in these ways would have been at least partially counteracted by increased competitive pressure from other MMA promoters.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

\_\_\_\_\_

458. WME-ZUFFA-00001150 at \*11.

459. *Id.*

460. *Id.*

461. *Id.*

462. DB-ZUFFA-00030406 at 07.

463. In a competitive labor market, compensation is set revenue paid to labor is determined by the productivity of labor, as opposed to the monopsony power of the firm that hires labor. *See, e.g.*, ROY RUFFIN & PAUL GREGORY, *PRINCIPLES OF MICROECONOMICS* 331-336 (Harper Collins 5th ed. 1993); *see also* MICHAEL KATZ & HARVEY ROSEN, *MICROECONOMICS* 264-65, 276-77 (Irwin McGraw-Hill 3rd ed. 1998).

[REDACTED]

see also ZUF-00017896, ZUF-00086103, LESPLAINTIFFS-0032374 at 74.

\_\_\_\_\_

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

Age Group	Percentage
18-24	100%
25-34	100%
35-44	100%
45-54	100%
55-64	100%
65-74	100%
75-84	100%
85+	100%

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

476. *Id.*

[REDACTED]

### 3. The Challenged Conduct Restricted the Supply of Fighter Services

193. As explained below, Zuffa restricted the supply of Fighter services by consistently maintaining significantly more Fighters under contract than it could use, creating forced periods of inactivity during which Fighters were not paid and were not available to other MMA promoters to fight. In addition, Zuffa pursued a strategy of limiting the number of career paths available to Fighters. In the absence of the Challenged Conduct, Zuffa's ability to restrict the supply of Fighter services in these ways would have been at least partially counteracted by increased competitive pressure from other MMA promoters.

194. Zuffa was consistently able to keep Fighters bound by the exclusionary provisions in its contracts—and thus unavailable to other MMA promoters—while simultaneously promoting an insufficient number of bouts given the number of Fighters on its roster. Record evidence indicates that Zuffa was able to suppress the number of events that Fighters would participate below what Fighters would otherwise prefer,<sup>478</sup> and that Zuffa consistently maintained significantly more Fighters under contract than it could use in bouts.<sup>479</sup> In his deposition, Joe Silva

testified that, from at least 2010 to 2015, he had “been complaining to managers and fighters and others” that Zuffa “had more fighters under contract than [Zuffa] had fights to give them.”<sup>480</sup> Silva also testified that he kept Fighters under contract who he otherwise would have cut; his rationale was to keep these Fighters away from Bellator.<sup>481</sup> Kurt Otto, President and founder of a now defunct MMA promotion called the IFL, testified that it was his perception that Fighters at Zuffa were “collecting dust.”<sup>482</sup> Record documents discuss the “shelving” of Fighters by Zuffa.<sup>483</sup>

195. In the absence of the Challenged Conduct, the excess Fighters on Zuffa’s roster could have earned income from other promoters, rather than being bound to Zuffa during periods of forced inactivity (during which they did not get paid). Put differently, Zuffa restricted the demand for Fighter services, by restricting their opportunities to earn income (given that Fighters are paid for bouts only when they fight).

196. This evidence is corroborated by a case study of the UFC by Jesse Baker and Matthew Thomson, which notes that the UFC’s strategy of “limiting the number of avenues that

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482. Deposition of Kurt Otto, February 6, 2017, 116:4-25.

young fighters could take to pursue careers in the sport of MMA seemed counter-intuitive, especially while simultaneously attempting to grow the organization.”<sup>484</sup> In the absence of the Challenged Conduct, Zuffa’s ability to restrict Fighter career paths would have been curtailed, because these Fighters would have had more viable paths for pursuing their careers with other MMA promoters.

#### 4. The Challenged Conduct Inflated the Price of Live MMA Events

486. See ZFL-2508548, at 567; see also ZFL-1243128, at 35.

487. See ZFL-1544038 at 62.

[illegible]

488. *Id.*

489. *Id.*

[REDACTED]

492. See RAINE0018791 at 802.



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

204. In addition, as explained below, the Challenged Conduct has restricted the output of Live MMA Events generally since 2010, a time period encompassing both a large increase in Zuffa's foreclosure of the Relevant Input Market and Submarket, and Zuffa's acquisition of Strikeforce.<sup>501</sup> This has caused industry output of Live MMA Events to fall (both in absolute terms and relative to prior trends) because the output of Live MMA Events by non-Zuffa promoters has fallen off sharply, with Zuffa's supply of Live MMA Events not increasing by enough to make up for the difference. This indicates that the Challenged Conduct suppressed the output of other MMA promoters. In the absence of the Challenged Conduct, Zuffa's ability to restrict industry output would have been at least partially counteracted by other MMA promoters, who would have been less constrained.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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500. See <https://www.bloodyelbow.com/2017/6/25/15870964/spike-executive-bellator-nyc-the-first-of-many-ppv-events-running-mma-news> (stating that Bellator's debut PPV event was in 2014; Bellator hosted its second-ever PPV event in June 2017).

501. See Figure 1, *supra*.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

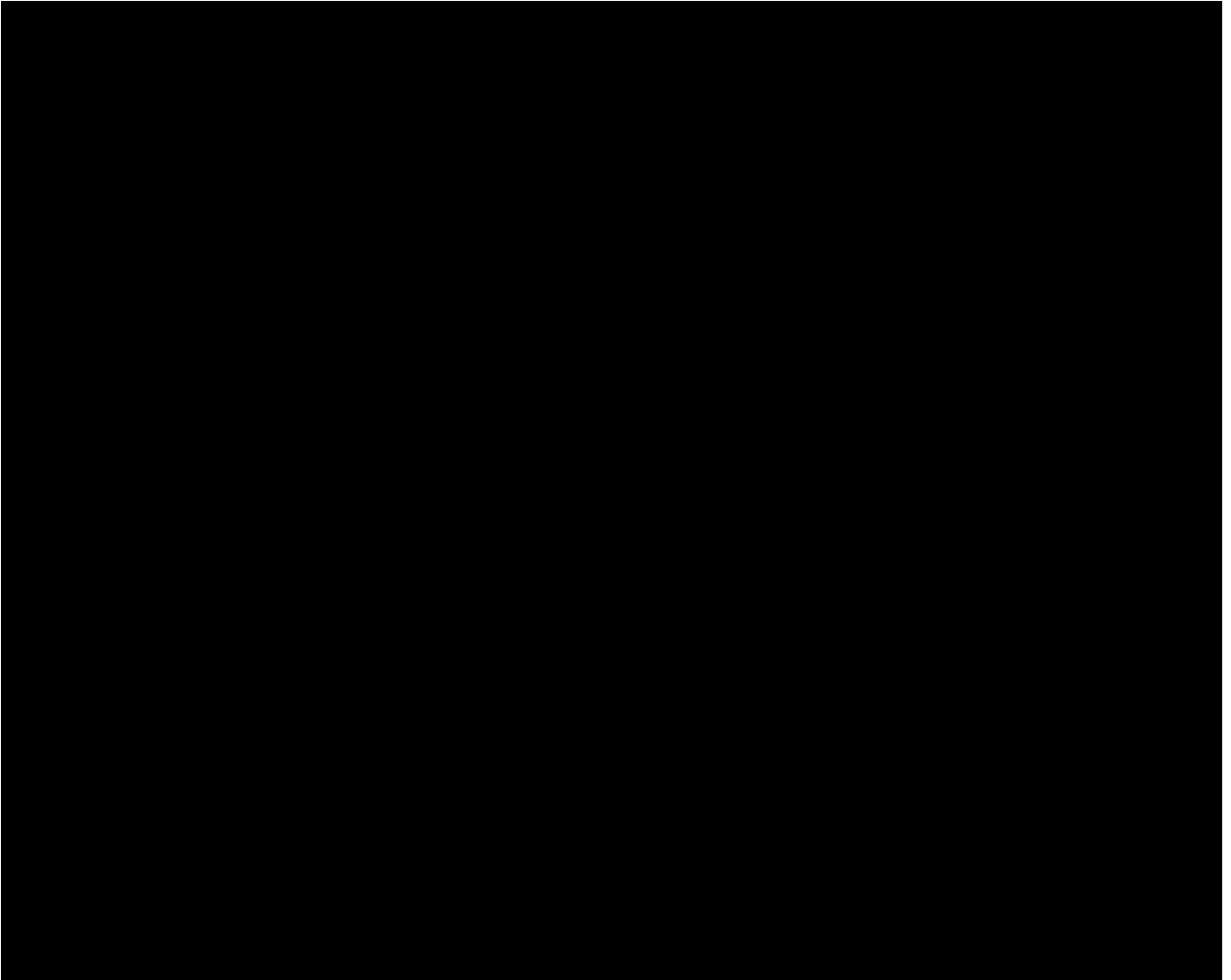
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



**6. All Evidence and Analysis of Anticompetitive Effects Is Common to the Classes**

208. All of the evidence of anticompetitive effects I have discussed in this report, and my analyses of that evidence, are common to the Classes as a whole. If I were asked to analyze anticompetitive effects for any single member of either Class, the evidence and analysis would be the same.

**IV. COMMON IMPACT ON THE BOUT CLASS**

209. In this section, I show that common impact can be demonstrated with respect to Bout Class Members using two separate, mutually reinforcing, methods. The first method is a standard, two-pronged, class-wide approach that has been accepted in prior antitrust litigation,

including in *High-Tech Employee* and in *Arizona Travel Nurses*.<sup>502</sup> Under this method, the first prong involves a determination as to whether classwide evidence is capable of showing that the Challenged Conduct had a generally suppressive effect on compensation Zuffa paid to members of the Bout Class. The second prong of the first method involves determining whether there is class-wide evidence of a mechanism that would transmit the artificially reduced compensation (found by the first prong) broadly across the Class.

210. The second method—also successfully employed in antitrust class actions to demonstrate common impact—uses standard, class-wide econometric techniques to demonstrate that the vast majority of Class Members received lower compensation than they would have in the but-for world. Under this second method, my econometric model compares the compensation actually received by each Class member to the amount that he or she would have received in the but-for world. Using this information, I then compute what proportion of Class members were artificially undercompensated due to the Challenged Conduct. This method, like the first, has been accepted in prior antitrust litigation.<sup>503</sup>

#### **A. The Challenged Conduct Suppressed Bout Class Compensation**

211. As explained above, the Challenged Conduct substantially foreclosed rivals from key inputs necessary to compete effectively, including most importantly access to the top-ranked

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502. I was the plaintiffs' economic expert in *Arizona Travel Nurses*. I have also served as expert for plaintiffs in other classes that have been certified based in part on my proof of common impact, including most recently *In Re Lidoderm Antitrust Litigation*. The district court accepted my methodology for proving antitrust impact in *Johnson v. Arizona Hospital & Healthcare Ass'n*, No. CV 07-1292-PHX-SRB, 2009 WL 5031334 (D. Ariz. 2009) at \*8, 11. The same "two-step" methodology utilized in *Johnson* was accepted by the court in *In re High-Tech Employee Antitrust Litigation*, Case No. 11-CV-2509-LH, *Order Granting Plaintiffs' Supplemental Motion For Class Certification* (Oct. 24, 2013) at 53 ("Plaintiffs noted that Dr. Leamer's approach followed a roadmap widely accepted in antitrust class actions that uses evidence of general price effects plus evidence of a price structure to conclude that common evidence is capable of showing widespread harm to the class."). See also, e.g., *Johnson*, 2009 WL 5031334 at \*8, 11 (finding predominance where conduct was alleged to suppress bill rates for nurses generally and evidence was presented that bill rates were correlated with nurse pay rates); Caves & Singer, *supra*, at 5.

503. See, e.g., *In re Air Cargo Shipping Servs. Antitrust Litig.*, No. 06-MD-1775 JG VVP, 2014 WL 7882100 (E.D.N.Y. Oct. 15, 2014).

### **B. Common Evidence of a Compensation Structure Is Capable of Demonstrating That Compensation Suppression Was Broadly Experienced Across Bout Class Members**

[illegible]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

213. Another mechanism transmitting suppressed compensation across all or almost all members of the Bout Class consists of a formulaic compensation structure, driven by observable common factors such as such as weight class, Fighter rank, gender, placement on the card, win/loss record, and so on, combined with (and mediated by) Zuffa’s implementation and enforcement of the economic concept of “internal equity,” under which Zuffa ensured that similarly situated

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505. As explained above, [REDACTED]  
[REDACTED] Coker Exh. 8; Coker Dep. at 95:10-20.

506. Coker Dep. at 97:18-99:3 (emphasis added).

507. U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (2010) [hereafter *Merger Guidelines*], §1; §12. *See also* MODERN IO at 107-110.

508. MODERN IO at 107-110; *see also* Merger Guidelines §1 (“Enhancement of market power by buyers, sometimes called ‘monopsony power,’ has adverse effects comparable to enhancement of market power by sellers. The Agencies employ an analogous framework to analyze mergers between rival purchasers that may enhance their market power as buyers”). *See also* §12. *See also* *Johnson v. Ariz. Hosp. & Healthcare Ass’n (AzHHA)*, No. CV 07-1292-PHXSRB, 2009 WL 5031334 (D. Ariz. July 14, 2009); *Vogel v. Am. Soc’y of Appraisers*, 744 F.2d 598, 601 (7th Cir. 1984) (stating that monopoly and monopsony are “symmetrical distortions of competition”) (quoted in *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312, 322 (2007)).

Fighters received similar compensation, and that differences in compensation could be explained by known or knowable factors.

214. Internal equity—also referred to by economists as wage compression—is the notion that laborers doing comparable work believe that they should receive similar compensation. As a forthcoming article in the *Quarterly Journal of Economics* notes, “a long tradition in economic thought—as well as in psychology, sociology, and organizational behavior—has advanced the notion that individuals also care about their pay relative to that of their co-workers.”<sup>509</sup> Because employees value internal equity, employers respond by implementing uniform compensation structures that pay comparable compensation for comparable work. One textbook explains that “[p]ay structure refers to the array of pay rates for different work or skills within a single organization,”<sup>510</sup> and refers to examples of pay structures at companies such as Merrill Lynch and Lockheed Martin.<sup>511</sup> Payroll software companies offer advice to employers on achieving internal equity:

Internal equity is the comparison of positions within your business to ensure fair pay. You must pay employees fairly compared to coworkers. Employees must also perceive that they are paid fairly compared to their coworkers. Otherwise, they might feel undervalued and leave. It is easy for employees to find out how much other employees earn via the Internet and word of mouth. If an employee works hard but is paid less than her coworkers who do not work as hard, she might become upset about her wages. When you adopt a straightforward and honest payment system, your employees will believe that they are being paid fairly and with equality. This boosts company morale and employee loyalty, bringing many benefits in the long run....

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509. Emily Breza, Supreet Kaur & Yogita Shamdasani, *The Morale Effects Of Pay Inequality*, QUARTERLY J. ECON. (forthcoming 2017), available at: <https://sites.google.com/view/ebreza/research>. See also Caves & Singer, *supra*; GEORGE MILKOVICH, JERRY NEWMAN & BARRY GERHART, COMPENSATION 69 (10th ed. McGraw-Hill 2011) (“Internal alignment, also called *internal equity*, refers to the pay relationships among different jobs/skills/competencies within a single organization.”) (emphasis in original).

510. Milkovich, et al., *supra*, at 69.

511. *Id.* at 69-73.

To create fair pay, you compare employees who do similar jobs for your company. You should consider the tasks your employees do. *If two employees perform similar tasks, they should earn similar wages.*<sup>512</sup>

215. As explained below, there is substantial documentary evidence indicating that the compensation paid to Zuffa Fighters followed a formulaic compensation structure driven, in part, by considerations of internal equity. In addition, I provide econometric evidence indicating that approximately three-quarters of the variation in observed Fighter compensation (in absolute levels) is accounted for by observable common factors (as opposed to individualized factors). I also demonstrate empirically that individual Fighter compensation per event moves together with the per-event compensation paid to other Fighters, both within and across years. Put differently, the gains (or losses) in compensation are shared broadly across Class members.<sup>513</sup> This evidence demonstrates that Zuffa follows a compensation structure driven by considerations of internal equity, which implies that the compensation-suppressing effects of the Challenged Conduct were not confined to a subset of Class members, but instead were broadly shared across the Class.

### 1. Documentary Evidence of a Compensation Structure

[REDACTED]

[REDACTED]

[REDACTED]

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512. Patriot Software, *Payroll Blog: Payroll Training, Tips, and News*, available at: <https://www.patriotsoftware.com/payroll/training/blog/what-is-internal-equity/> (emphasis added). See also Stacey Carroll, “Does Your Company Have Internal Pay Equity?” available at: <http://www.payscale.com/compensation-today/2009/03/importance-of-internal-pay-equity>

513. A similar approach was used to demonstrate a compensation structure in *High-Tech Employee*. See Caves & Singer, *supra*, at 5.

514. I review the forms of Fighter compensation paid by Zuffa, including show and win payments, in Part I.C above.

[REDACTED]

[REDACTED]

[REDACTED]

516. *See, e.g.*, ZFL-0000003.xls (spreadsheet showing show and win purses).

[REDACTED]

518. Silva Dep. at 341:11-20 (“Q. With respect to your question on how our compensation structure works, under our standard agreements a fighter only moves up in compensation if he wins. If a fighter does not win [and we] elect not to terminate the fighter his following bout stays at the same amount as previous fight? Do you see that? A. Yes. Q. That’s accurate; right? A. Yes.”).

[REDACTED]

520. *See* ZFL-0504268, 273-274 (contract signed 12/30/2008).

[illegible]

[REDACTED]

521.

522. Silva Dep. at 338:24-339:14 (“Q. Okay. And the way the contracts were structured, is it fair to say that they’re structured so that if a fighter wins they move to the next level in the contract? A. That’s correct. Q. If they lose they stay at same level? A. That is accurate. Q. So a contract can have 10 and 10 and 12 and 12 and if fighter wins 10 and 10 they move to the 12 and 12? A. Correct if they lose 10 and 10 they stay at 10 and 10 for the next fight. A. Yes. Correct.”).

523. ZFL-0000003.xls (showing Quarry's win/loss record back to 2005).

524. ZFL-0003018, 022-024.

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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528. Deposition of Sean Shelby, January 25, 2017, at 241:22-242:1.

529. *Id.* at 242:4-242:5.

[REDACTED]

531. ZFL-0895314.

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[REDACTED]

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████████████████████

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532. ZFL-0895314, 315.

533. *Id.*

534. ZFL-0895314, 316-317.

535. Deposition of Denitza Batchvarova, January 25, 2017, at 37:8-19.

536. *Id.* at 38:11-39:1.

537. *Id.* at 40:9-11, 66:8-18.

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 2. Econometric Evidence of a Compensation Structure

227. To determine what proportion of the variation in Bout Class compensation (above and beyond the average) is attributable to common factors, I performed a regression analysis that explains total Fighter compensation (in levels, as opposed to share of event revenues) using some of the same explanatory variables from my regression analysis in Part III.D.1 above. However, I exclude from this regression Fighter-specific performance variables from the FightMetric database (such as average strikes landed, average takedown attempts, and so on). The regression analysis

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544. Silva Dep. at 372:22-373:18 (“Q. Right. And so you wanted to make sure that you did your best to try to make sure that comparable fighters with comparable records are getting paid comparable amounts; is that fair? A. Yeah, that was my goal. Q. And one of the reasons why you did that is because you had to justify everyone’s pay to everyone else, and if you ...were doing this poorly or inefficiently, you’d constantly have fighters demanding more money, they’d say, hey, wait, you paid this guy this much and that guy that much, and you wouldn’t be able to justify to them if -- if you hadn’t been doing this well; is that right? A. It would just seem unfair to give somebody something that somebody else, equally deserving, didn’t get. Q. And you attempted, at least in your mind, to be fair, to impose a sense of equity between the different fighters; correct? A. I did.”).

545. *Id.*

[REDACTED]

547. ZUF-00296703-706.

548. Milkovich, et al., *supra*, at 69-73.

therefore relies upon common and objectively measurable factors only—such as weight class, rank, gender, placement on the card, year, country, and venue—to explain variation in observed Fighter compensation. The dependent variable is the natural log of a Fighter’s Event Compensation. The *R*-squared obtained from this regression is approximately 78 percent. Accordingly, over three-quarters of the observed variation in Fighter Compensation—above and beyond what can be explained by the sample average—is explained by common factors. This provides further evidence of a compensation structure determined by factors common to the Class as a whole. Given that those factors would likely be the same in the but for world, the same factors that determine relative differences in compensation between Fighters would remain, and thus a general increase in compensation in the but for world would likely affect all Class members. A rise in some corresponds to a rise in all, just as a reduction in some would result in a reduction in all, because the compensation structure interconnects the compensation of all or almost all Zuffa Fighters.

228. Next, I performed regressions to determine whether gains (or losses) in compensation are broadly shared across the Bout Class. Similar to analyses performed by the Plaintiffs’ expert economist in *High-Tech Employee*, these regressions measure the extent to which an increase in the compensation paid to Fighters overall is statistically associated with an increase in compensation for individual Fighters.<sup>549</sup> Specifically, I estimated regressions in which the dependent variable was set equal to an individual Fighter’s annual compensation per event, and the independent variable was set equal to either: (1) the average compensation per event paid to all other Fighters in *that* year; or (2) the average compensation per event paid to all other Fighters in

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549. See *Order Granting Plaintiffs’ Supplemental Motion for Class Certification, High-Tech Employee Antitrust Litig.*, No. 11-CV-02509 (N.D. Cal. Oct. 24, 2013), at 60-61. See also Caves & Singer, *supra*, at 5.

the *prior* year. Because the variables are measured annually, these regressions do not include the same set of control variables as the regressions reported in Part III.D.1 above (such as controls for Fighter performance within a bout, venue fixed effects, etc.). Instead, they include fixed effects by Fighter, which control for all individual-specific, time-invariant Fighter characteristics. The variable *Trend* is an annual time trend; this controls for secular trends over time that may be correlated with compensation.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]




[REDACTED]

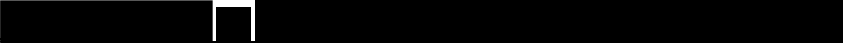









[REDACTED]


[REDACTED]

**C. Standard Econometric Methods Further Demonstrate Directly That the Vast Majority of Bout Class Members Received Lower Compensation Than They Would Have In the But-For World**

230. To provide further proof of classwide impact, I used standard econometric methods common to the Class as a whole to determine whether the vast majority of Bout Class Members received lower compensation than they would have in the absence of the Challenged Conduct. Specifically, I used the regression models from Part III.D.1 to predict the but-for compensation share for each Fighter in each event in the but-for world. I then compared the predicted but-for compensation share with the share of Event Revenue that the Fighter actually received in that event.



232. In summary, based on two independent methods, I conclude that all or almost all members of the Bout Class suffered antitrust injury as a result of the Challenged Conduct.<sup>551</sup>

#### V. COMMON IMPACT ON IDENTITY CLASS

233. In this section, I show that common impact can be demonstrated for two subgroups of the Identity Class. The first (“Identity Subgroup One”) consists of those who received at least some sponsorship payments, video game payments, merchandise royalty payments, or athlete outfitting policy payments from Zuffa during the Class Period, according to Zuffa’s records. The second (“Identity Subgroup Two”) consists of all Fighters who executed a PAR during the Class Period, regardless of whether these Fighters received compensation for use of their Identity in the actual world according to the JD Edwards or Merchandise Royalty Accrual database.<sup>552</sup>

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550. That a small percentage of a Fighters are not shown to have been undercompensated under this method does not imply that he or she was uninjured. As explained in the two-step method in Part IV.B, a generalized increase in compensation in the but-for world would have benefitted all or almost all Fighters.

551. Both methods of proving common impact to the Bout Class (the two-step method described in Part IV.B above, and the econometric method described here) reveal that all of the proposed representative plaintiffs for the Bout Class (namely, Cung Le, Jon Fitch, Brandon Vera, Luis Javier Vazquez, and Kyle Kingsbury) suffered impact in the form of artificially suppressed compensation due to the Challenged Conduct. *See* backup data.

552. My methods for proving common impact to the Identity Class reveal that the following proposed named plaintiffs for the Identity Class suffered impact in the form of artificially suppressed compensation due to the Challenged Conduct: Cung Le, Jon Fitch, Brandon Vera, Luis Javier Vazquez, Kyle Kingsbury, and Nate Quarry.

234. As explained below, I conclude that all or almost all of Identity Subgroup One suffered antitrust injury, based on the same, two-pronged method that was used to prove impact for the Bout Class. With respect to Identity Subgroup Two, I conclude that all or almost all of these Class members have suffered antitrust injury, because all or almost all of these Class members would have received at least nominal, one-time payment at the time that their PARs were executed as compensation for use of their Identity in the but-for world.

### A. The Challenged Conduct Suppressed Identity Class Compensation

235.

553. See Part III.D.2, *supra*.

[illegible]

555. See Appendix 2.

556. See Part III.D.1, *supra*.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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558. DB-ZUFFA-00007015 at DB-ZUFFA-00007078.  
559. ZFL-1056348.  
560. *Id.*, tab 2 (“Fighter Bonus Recommendation”).  
561. *Id.*

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### B. Mechanisms Exist to Transmit Compensation Suppression Broadly Across Identity Class Members

241. Record evidence confirms the existence of uniform compensation structures transmitting compensation suppression broadly across the Identity Class. Zuffa's documents indicate that—to the extent that members of the Identity Class were compensated at all—payments were governed by formulaic structures. As discussed in Section I.D, Fighters received three different kinds of compensation from Zuffa for the use of their identity: (1) merchandise royalty payments; (2) payments for participation in official sponsorship programs; and (3) video game payments. These payments followed formulaic structures.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[illegible][illegible]

569. *Id.*

570. *Id.*

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

244. In summary, the Challenged Conduct suppressed compensation for both Identity Subgroups, and there exist mechanisms to transmit this suppression broadly across Class Members. Accordingly, all or almost all members of Identity Subgroup One and Two suffered antitrust injury as a result of the Challenged Conduct.

#### **VI. AGGREGATE DAMAGES**

245. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

246. It bears emphasis that, although Zuffa Fighters would earn higher compensation in the but-for world, not all Zuffa Fighters would necessarily be fighting for Zuffa in that newly competitive world. In the but-for world, other MMA promoters would have been able to attract more Fighters, would have earned higher revenue, and would have paid competitive compensation to those Fighters. Further, as shown in Part III.D.V above, output of Live MMA Events would

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571. ZFL-0979654.

expend in a but-for world absent the Challenged Conduct, which could generate more revenue with which to compensate Fighters. Accordingly, for this and other reasons,<sup>572</sup> damages should not be constrained by the contemporaneous revenue and profit earned by Zuffa in the actual world.<sup>573</sup>

### A. Aggregate Damages Using Strikeforce and Bellator Benchmarks

247.

[illegible]

573. Moreover, as explained in Part VII, Zuffa's profits appear to have been understated by Zuffa's accounting practices.

574. Calculated from ZFL-1472337, and ZFL-1472338.

575. Calculated from SBPCL00002101.



**B. Aggregate Damages Using Zuffa Foreclosure Regression Benchmark**

249. As an alternative to the Strikeforce and Bellator benchmarks, I calculate damages using a third benchmark that does not rely on any information from other MMA promoters. Instead, the third benchmark is based on the statistical relationship between Zuffa's foreclosure share and its own Fighter Shares over time. To quantify this relationship, I estimated a regression model similar to that presented in Part III.D.1, except that all data points for Strikeforce prior to its acquisition by Zuffa are discarded from the regression model. I conservatively used the Ranked measure of the Relevant Input Market to calculate damages.

250. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**C. Aggregate Damages Using Impact Regression Model Benchmark**

251. My fourth measure of aggregate damages uses the impact regression model presented in Part III.D.1. By using the Strikeforce observations before Strikeforce was acquired by Zuffa, this method generates a larger coefficient on the foreclosure share relative to the regression model presented above. As before, I conservatively used the Ranked measure of the Relevant Input Market to calculate damages.

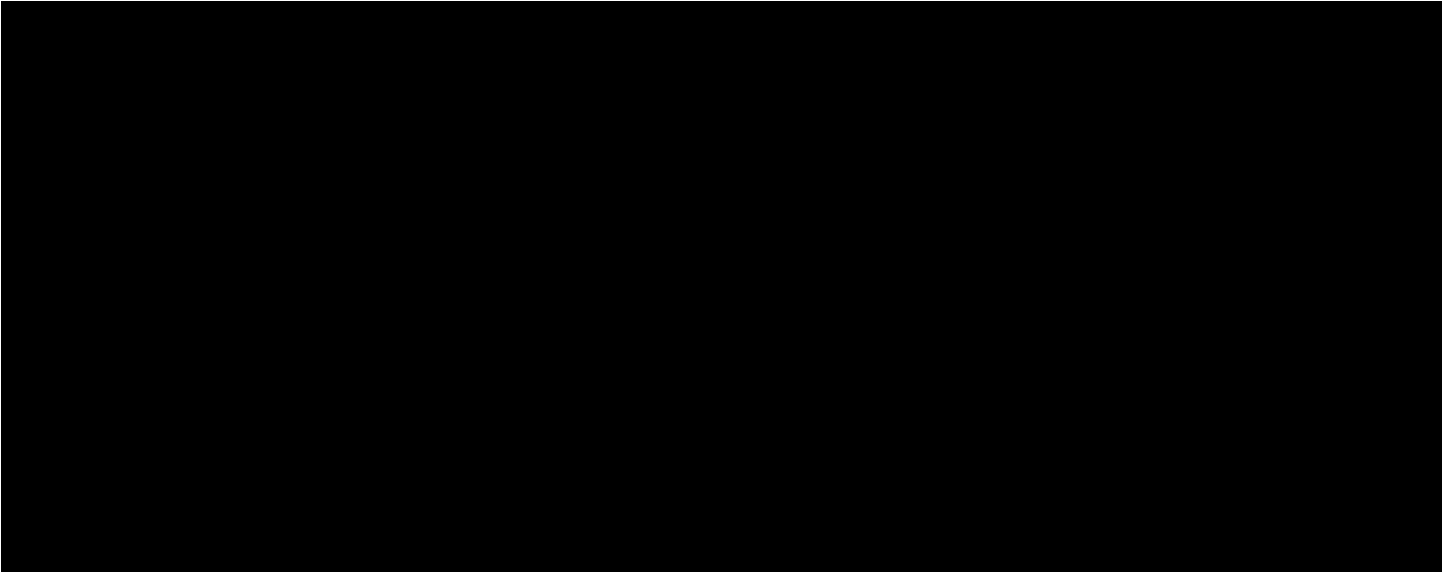
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



**D. Aggregate Damages to the Identity Class**

253. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

**VII. ZUFFA’S LIKELY EFFICIENCY DEFENSES ARE UNAVAILING**

[REDACTED]

258. Zuffa’s efficiency defenses, like the claims made by owners in other professional sports leagues in the past, amount to the claim that Zuffa must be permitted to exercise monopoly

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[REDACTED]

578. *Id.*

579. *Id.*

[illegible]

582. *Id.* at 065.

[illegible]

583. See Parts III.D.5 and III.B.2, *supra*.  
584. See Part II.C, *supra*.  
585. *Id.*  
586. *Gaglio Letter* at 064.  
587. *Id.* at 067.  
588. See Part III.B, *supra*.

[illegible]

589. See Part III.C, *supra*.

590. *Gaglio Letter, supra*, at 075.

591. *Id.*

592. See Part II.B, *supra*.

593. *Gaglio Letter, supra*, at 076, n.27 (citing UFC Cut Fighters Analysis, 2008-2015, prepared by Dr. Blair's team).

594. *Id.* at 074.

[illegible]

597. See Declaration of Andrew R. Dick, Ph.D., Submitted to the Federal Trade Commission on Behalf of Zuffa, LLC (December 1, 2011), ZFL-1212452 [hereafter *Dick Report*] at 472; see also 547-550 (identifying, from 2001 – 2010, the annual number of UFC PPV events, paid attendance at UFC PPV events, North American UFC PPV buys, and closed circuit locations for UFC PPV events).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

598. *Fort Report, supra*, at 331.

599. See Part III.B, *supra*.

600. See Part III.D.4, *supra*.

601. *Id.*

[illegible]

603. *Id.* at 568-570. Dr. Fort submitted identical analyses. *See* ZFL-1212308 at 348-350.

605. *Id.* at 568, 570.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

608. Scott Coker, former CEO of Strikeforce, testified that Fighters received significantly lower offers after Strikeforce was acquired. Coker testified that, after the Strikeforce acquisition “[a] lot of people were disappointed ... [b]ecause you know, I had managers call me and say: Now our purses are going to go down. Now there’s only one buyer and it’s not going to be good for MMA as an industry.” Coker Dep. 135:10-25. One year after the acquisition, managers were telling Coker that “offers are about 20 percent less than when you guys [Strikeforce] were here.” *Id.* 137:14-21.

[illegible]

610. *Id.* at 495-500.

611. *Id.* at 501.

[REDACTED]

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\_\_\_\_\_

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[illegible]

UFFA-00001150 at \*5.

UFFA-00001150 at \*5.

625. *Id.*

626. *Id.*

627. For example, when analyzing the potential for anticompetitive effects of a proposed merger, the antitrust agencies' *Horizontal Merger Guidelines* recognize that anticompetitive mergers may induce firms to reduce investment in capacity, or even to disinvest in pre-existing production capabilities. *Merger Guidelines, supra*, §6.3. The *Guidelines* also state that “[e]xplicit or implicit evidence that the merging parties intend to raise prices, reduce output or capacity, reduce product quality or variety, withdraw products or delay their introduction, or curtail research and development efforts after the merger, or explicit or implicit evidence that the ability to engage in such conduct motivated the merger, can be highly informative in evaluating the likely effects of a merger.” *Id.* §2.2.1. *See also* Jonathan Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575-602, 577 (2007).

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629. *Id.*

630. See Part III.D, *infra*.

631. *Gaglio Letter*, *supra* at 073.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**D. The Experience of Other Professional Sports Leagues and the Sports Economics Literature Suggests That Elimination of the Challenged Conduct Would Benefit Fighters, Consumers, and the MMA Industry As a Whole**

286. Although there is little question that the demand for professional Live MMA Events has expanded significantly in recent years, I have seen no persuasive evidence that the Challenged Conduct was necessary to facilitate this expansion, or that eliminating the Challenged Conduct would somehow impair the development of the industry. To the contrary, the experience of other professional sports leagues suggests that cessation of the Challenged Conduct would enhance competition and benefit the industry as a whole.

287. Before free agency was introduced in other professional sports leagues, it was sometimes argued by sports leagues that it was necessary to exercise monopsony power over

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632. ZFL-1387999 (2011 Fox Agreement spanning [REDACTED])

[REDACTED]

athletes in order to ensure “competitive balance” (a commonly used measure of fan welfare).<sup>634</sup> The claim was that free agency would be harmful to fans and the industry overall, with talent flowing disproportionately to a small number of dominant teams. Yet the introduction of free agency to one professional sport after another has not had this effect.<sup>635</sup> As Stanford sports economist Roger Noll has observed:

The [Leagues’] argument amounts to the claim that collusion by teams in sports leagues is justified because it is efficient and improves the welfare of consumers. This line of argument is rejected by virtually all economic studies of professional sports....[T]he assignment of ownership of an asset (here, a player’s human capital) will not affect the ultimate allocation of that asset in a competitive market... Thus, there is no basis for the claim that anticompetitive restrictions in the player market enhance efficiency....<sup>636</sup>

288. Given that MMA is not a team sport, it unsurprising that Zuffa has not claimed that its conduct can be justified by concerns of competitive balance. Nevertheless, Zuffa’s efficiency justifications, like those of professional sports leagues in the past, are premised on the notion that incentives to invest appropriately in Fighter services, and in promoting the bouts valued most highly by fans, are contingent on imposing restraints on athletes. Zuffa is wrong today for similar reasons that other sports leagues were wrong in the past: The reason that anticompetitive restraints on the market for athletes services cannot be justified in terms of economic efficiency is that, in a competitive market for athlete services, each athlete’s “human capital” will flow to its highest-valued use.<sup>637</sup> In a competitive market, MMA promoters would compete for talent by assembling

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634. See, e.g., Brad R. Humphreys, *Alternative Measures of Competitive Balance in Sports Leagues*, J. SPORTS ECON. 133-148 (2002).

635. Roger Noll, *Buyer Power and Economic Policy*, 72 ANTITRUST L.J. 615-616 (2005).

636. *Id.* Professor Fort himself reaches a similar conclusion in his sports economics textbook. RODNEY D. FORT, SPORTS ECONOMICS 267 (Prentice Hall 3rd ed. 2011). See also JAMES QUIRK & RODNEY D. FORT, PAY DIRT: THE BUSINESS OF PROFESSIONAL TEAM SPORTS 240 (Princeton University Press 1992).

637. See Noll, *supra*, at 616; see also Simon Rottenberg, *The Baseball Players’ Labor Market*, 64(3) J. POL. ECON. 242-258 (1956); Quirk & Fort, *supra*; Mohamed El-Hodiri & James Quirk, *An Economic Model of a Professional Sports League*, 79 J. POL. ECON. 1302 (1971); Roger G. Noll, *Professional Basketball: Economic and Business Perspectives*, in THE BUSINESS OF PROFESSIONAL SPORTS 18 (Paul D. Staudohar & James A. Mangan eds.,

the highest compensation and benefits and the highest-valued matchups (including a willingness to co-promote). Fighters would offer their services to the MMA promoter that offers the most favorable compensation commensurate with their productivity (their marginal revenue product). This would derive from MMA promoters' deploying Fighters' human capital to its highest-valued use (that is, the matchups valued highest by fans).

289. Far from harming the sport, the increased competition that would prevail in the but-for world would be expected to benefit the industry. Sports economists—including Professor Fort—recognize that fans are harmed when sports leagues exercise market power through coordinated behavior; “fans pay more for less in the presence of market power.”<sup>638</sup> As Professor Fort concludes in an article appearing in *The Economics of Sports*,

Almost all economists see the ultimate culprit [for rising ticket prices and other trends harmful to fans] as market power, which derives from the special legal treatment of leagues. The outcomes are exclusive franchise rights for teams, management of sports leagues as cartels, and a complete stifling of any competing leagues, precisely those indicated by the basic economic theory of market power.<sup>639</sup>

290. Through the Challenged Conduct, Zuffa has achieved results analogous to cartelization of the MMA industry, without even the mitigating factor of having various teams within the UFC competitively bidding on athlete services as other sports leagues have. Another important distinction between Zuffa and certain other sports leagues is that Zuffa does not enjoy special immunity from antitrust enforcement. Fighters, fans, and the industry as a whole would be

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1991); Daniel Sutter & Stephen Winkler, *NCAA Scholarship Limits and Competitive Balance in College Football*, 3 J. SPORTS ECON. 16 (2003).

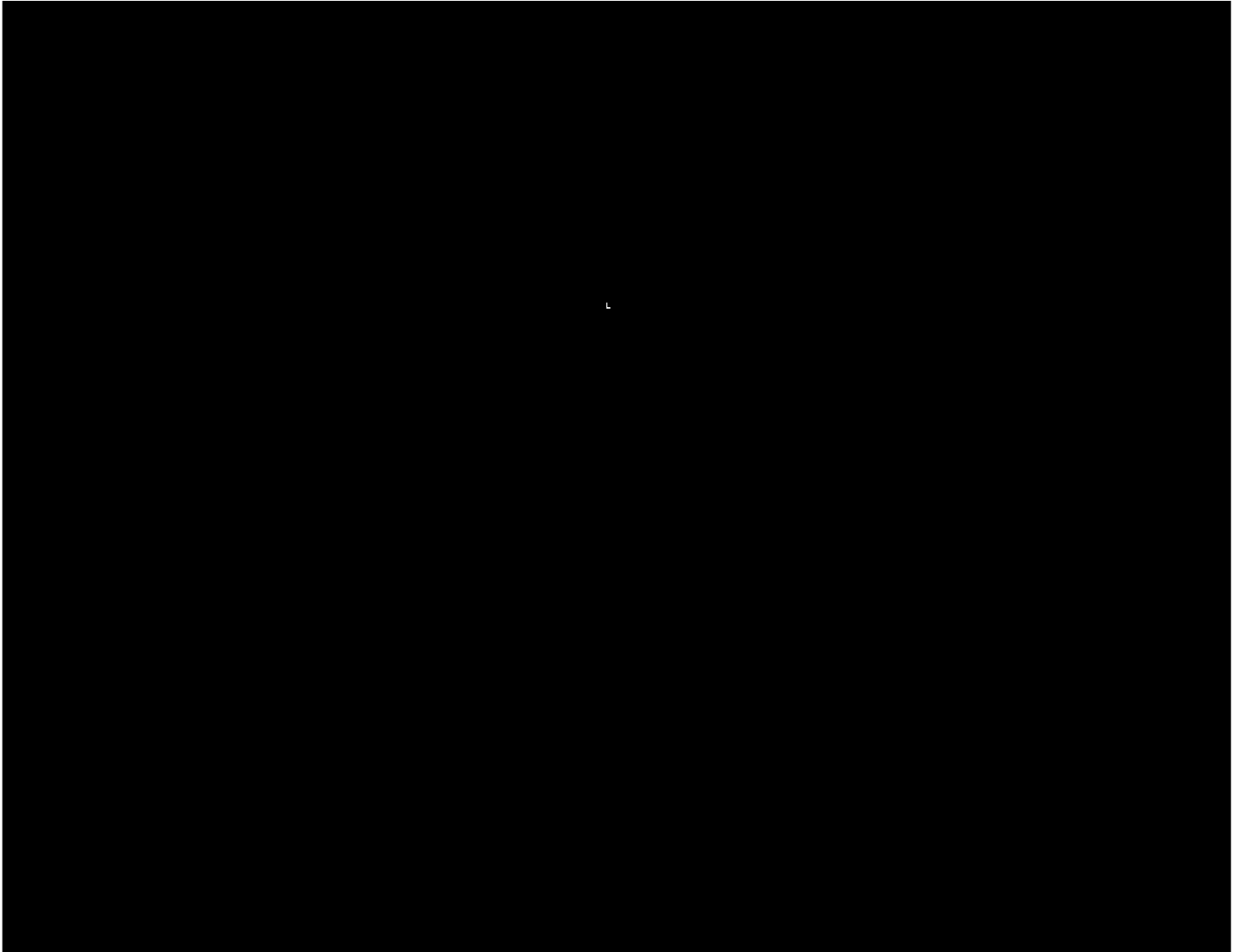
638. Fort, *supra*, at 409 (“From the fans’ perspective, market power has the general tendency to reduce output and increase price...fans pay more for less in the presence of market power.”). See also ZFL-1212308 at 11-12; see also MICHAEL LEEDS, & PETER VON ALLMEN, *THE ECONOMICS OF SPORTS* 111 (Boston Addison Wesley 2002); see also Roger Noll, *The Economics of Baseball Contraction* 4 J. SPORTS ECON. 383 (2003); see also JAMES QUIRK & RODNEY D. FORT, *HARD BALL: THE ABUSE OF POWER IN PRO TEAM SPORTS* 9 (Princeton University Press 1999).

639. Rodney D. Fort, *Market Power in Pro Sports: Problems and Solutions*, in *THE ECONOMICS OF SPORTS* 8 (ed. WILLIAM S. KERN, W. E. Upjohn Institute for Employment Research 2000).

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expected to benefit from removal of the Challenged Conduct and the introduction of increased competition through antitrust enforcement.

#### CONCLUSION



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Hal J. Singer

Executed on August 31, 2017.

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## **APPENDIX 1: CURRICULUM VITAE**

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Ph.D., The John Hopkins University, 1999; M.A. 1996, Economics

B.S., Tulane University, *magna cum laude*, 1994, Economics.  
Dean's Honor Scholar (full academic scholarship). Senior Scholar  
Prize in Economics.

### **Current Position**

ECONOMISTS INCORPORATED, Washington, D.C.: Principal  
2014-present.

GEORGETOWN UNIVERSITY, MCDONOUGH SCHOOL OF  
BUSINESS, Washington, D.C.: Adjunct Professor 2010, 2014, 2016.

GEORGE WASHINGTON UNIVERSITY, SCHOOL OF PUBLIC  
POLICY, GEORGE WASHINGTON INSTITUTE FOR PUBLIC  
POLICY, Washington, D.C.: Senior Fellow 2016-present.

### **Employment History**

NAVIGANT ECONOMICS, Washington, D.C.: Managing Director,  
2010-2013.

EMPIRIS, L.L.C., Washington, D.C.: Managing Partner and  
President, 2008-2010.

CRITERION ECONOMICS, L.L.C., Washington, D.C.: President,  
2004-2008. Senior Vice President, 1999-2004.

LECG, INC., Washington, D.C.: Senior Economist, 1998-99.

U.S. SECURITIES AND EXCHANGE COMMISSION, OFFICE OF ECONOMIC ANALYSIS, Washington, D.C.: Staff Economist, 1997-98.

THE JOHNS HOPKINS UNIVERSITY, ECONOMICS DEPARTMENT, Baltimore: Teaching Assistant, 1996-98.

### **Authored Books and Book Chapters**

THE NEED FOR SPEED: A NEW FRAMEWORK FOR TELECOMMUNICATIONS POLICY FOR THE 21ST CENTURY, co-authored with Robert Litan (Brookings Press 2013).

*Net Neutrality Is Bad Broadband Regulation*, co-authored with Robert Litan, in THE ECONOMISTS' VOICE 2.0: THE FINANCIAL CRISIS, HEALTH CARE REFORM AND MORE (Aaron Edlin and Joseph Stiglitz, eds., Columbia University Press 2012).

*Valuing Life Settlements as a Real Option*, co-authored with Joseph R. Mason, in LONGEVITY TRADING AND LIFE SETTLEMENTS (Vishaal Bhuyan ed., John Wiley & Sons 2009).

*An Antitrust Analysis of the World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services*, co-authored with J. Gregory Sidak, in HANDBOOK OF TRANS-ATLANTIC ANTITRUST (Philip Marsden, ed. Edward Elgar 2006).

BROADBAND IN EUROPE: HOW BRUSSELS CAN WIRE THE INFORMATION SOCIETY, co-authored with Dan Maldoom, Richard Marsden and J. Gregory Sidak (Kluwer/Springer Press 2005).

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### **Journal Articles**

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*The Curious Absence of Economic Analysis at the Federal Communications Commission: An Agency in Search of a Mission*, INTERNATIONAL JOURNAL OF COMMUNICATIONS (2017), co-authored with Gerald Faulhaber and Augustus Urschel.

*On the Utility of Surrogates for Rule of Reason Cases*, COMPETITION POLICY INTERNATIONAL (2015), co-authored with Kevin Caves.

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*Econometric Tests for Analyzing Common Impact*, 26 RESEARCH IN LAW AND ECONOMICS (2014), co-authored with Kevin Caves.

*Life After Comcast: The Economist's Obligation to Decompose Damages Across Theories of Harm*, ANTITRUST (Spring 2014), co-authored with Kevin Caves.

*Is the U.S. Government's Internet Policy Broken?*, 5 POLICY AND INTERNET (2013), co-authored with Robert Hahn.

*Avoiding Rent-Seeking in Secondary Market Spectrum Transactions*, 65 FEDERAL COMMUNICATIONS LAW JOURNAL (2013), co-authored with Jeffrey Eisenach.

*Vertical Integration in Multichannel Television Markets: A Study of Regional Sports Networks*, 12(1) REVIEW OF NETWORK ECONOMICS (2013), co-authored with Kevin Caves and Chris Holt.

*Assessing Bundled and Share-Based Loyalty Rebates: Application to the Pharmaceutical Industry*, 8(4) JOURNAL OF COMPETITION LAW AND ECONOMICS (2012), co-authored with Kevin Caves.

*Lessons from Kahneman's Thinking Fast and Slow: Does Behavioral Economics Have a Role in Antitrust Analysis?*, The ANTITRUST SOURCE (2012), co-authored with Andrew Card.

*Assessing Competition in U.S. Wireless Markets: Review of the FCC's Competition Reports*, 64 FEDERAL COMMUNICATIONS LAW JOURNAL (2012), co-authored with Gerald Faulhaber and Robert Hahn.

*An Empirical Analysis of Aftermarket Transactions by Hospitals*, 28 JOURNAL OF CONTEMPORARY HEALTH LAW AND POLICY (2011), co-authored with Robert Litan and Anna Birkenbach.

*Economic Evidence of Common Impact for Class Certification in Antitrust Cases: A Two-Step Analysis*, ANTITRUST (Summer 2011).

*Addressing the Next Wave of Internet Regulation: Toward a Workable Principle for Nondiscrimination*, 4 REGULATION & GOVERNANCE (2010), co-authored with Robert Hahn and Robert Litan.

*Class Certification in Antitrust Cases: An Economic Framework*, 17 GEORGE MASON LAW REVIEW (2010), co-authored with Robert Kulick.

*The Economic Impact of Eliminating Preemption of State Consumer Protection Laws*, 12 UNIVERSITY OF PENNSYLVANIA JOURNAL OF BUSINESS LAW 781 (2010), co-authored with Joseph R. Mason and Robert B. Kulick.

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Good Intentions Gone Wrong: The Yet- To- Be- Recognized Costs of the Department Of Labor's Proposed Fiduciary Rule (prepared for Capital Group), co-authored with Robert Litan (July 2015).

Bringing Sanity Back to the Spectrum Debate: A Response to CCA's White Paper (prepared for Mobile Future), co-authored with Allan Ingraham (June 26, 2015).

Unlocking Patents: Costs of Failure, Benefits of Success (prepared for Patent Utility) (Feb. 4, 2015).

The Consumer Benefits of Efficient Mobile Number Portability Administration (prepared for Neustar) (Mar. 8, 2013).

Economic Analysis of the Implications of Implementing EPA's Tier 3 Rules (prepared for Emissions Control Technology Association), co-authored with George Schink (June 14, 2012).

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Do Group Purchasing Organizations Achieve the Best Prices for Member Hospitals? An Empirical Analysis of Aftermarket

Transactions (prepared for Medical Device Manufacturers Association), co-authored with Robert Litan (Oct. 6, 2010).

The Economic Impact of Broadband Investment (prepared for Broadband for America), co-authored with Robert Crandall (Feb. 23, 2010).

Why the iPhone Won't Last Forever and What the Government Should Do to Promote Its Successor (prepared for Mobile Future), co-authored with Robert Hahn (Sept. 21, 2009).

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Association and the High Tech DTV Coalition), co-authored with Peter Cramton, Thomas S. Dombrowsky, Jr., Jeffrey A. Eisenach, and Allan Ingraham (Feb. 6, 2007).

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### **Speaking Engagements**

*Antitrust and Telecommunications*, ABA ANTITRUST IN THE AMERICAS, Mexico City, June 1, 2017.

*Fundamentals—Economics*, ABA SECTION OF ANTITRUST LAW SPRING MEETING, Washington, D.C., Mar. 29, 2017.

*DOL Rule Analysis and FSR's SIMPLE PTE Explained*, FINANCIAL SERVICES ROUNDTABLE, Washington, D.C., Aug. 6, 2015.

*New Principles for a Progressive Broadband Policy*, PROGRESSIVE POLICY INSTITUTE, Washington, D.C., Mar. 13, 2014.

*The Open Internet: Where Do We Go From Here?* PROGRESSIVE POLICY INSTITUTE, Washington, D.C., Jan. 29, 2014.

*Does Platform Competition Render Common Carriage Irrelevant in an IP world?* PROGRESSIVE POLICY INSTITUTE, Washington, D.C. Nov. 20, 2013.

*The 41st Research Conference on Communication, Information and Internet Policy*, TELECOMMUNICATIONS POLICY RESEARCH CONFERENCE, George Mason University School of Law, Arlington, VA, September 27, 2013.

*The Broadband Technology Explosion: Rethinking Communications Policy for a Mobile Broadband World*, Pepperdine School of Public Policy, Menlo Park, CA June 20, 2013.

*Net Neutrality: Government Overreach or the Key to Innovation?*, NORTHWESTERN JOURNAL OF TECHNOLOGY AND INTELLECTUAL PROPERTY EIGHTH ANNUAL SYMPOSIUM, Chicago, IL, Mar. 8, 2013.

*Internet Everywhere: Broadband as a Catalyst for the Digital Economy*, The Brookings Institution, Washington, D.C., Nov. 27, 2012.

*Can Broadband Power an Economic Recovery?*, Advanced Communications Law & Policy Institute at New York Law School, Washington, D.C., July 10, 2012.

*Using Regression in Antitrust Cases*, UNIVERSITY OF PENNSYLVANIA LAW SCHOOL, Philadelphia, PA, Apr. 12, 2012.

*Mergers: The Road to Duopoly or Path to Competitive Panacea?* NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, Los Angeles, CA, July 20, 2011.

*State of the Mobile Net*, CONGRESSIONAL INTERNET CAUCUS, Washington, D.C., May 27, 2011.

*Waves of Innovation: Spectrum Allocation in the Age of the Mobile Internet*, INFORMATION TECHNOLOGY & INNOVATION FOUNDATION, Washington D.C., May 17, 2011.

*With or Without Merit, Class Certification Requires Commonality*, ABA SECTION OF ANTITRUST LAW 59TH ANNUAL SPRING MEETING, Washington, D.C., Mar. 30, 2011.

*4th Annual Future of Private Antitrust Enforcement Conference*, AMERICAN ANTITRUST INSTITUTE, Washington, D.C., Dec. 7, 2010.

*Jobs and Technology*, NEW DEMOCRATIC LEADERSHIP COUNCIL, Washington, D.C., Sept. 22, 2010.

*Regulation and Broadband*, ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE, NEW YORK LAW SCHOOL, New York, N.Y., July 14, 2010.

*13th Annual Symposium on Antitrust*, GEORGE MASON LAW REVIEW, Washington, D.C., Feb. 4, 2010.

*Broadband Infrastructure and Net Neutrality*, ADVISORY COMMITTEE TO THE CONGRESSIONAL INTERNET CAUCUS' STATE OF THE NET, Washington, D.C., Jan. 22, 2010.

*The Consequences of Net Neutrality Regulations*, AMERICAN CONSUMER INSTITUTE CENTER FOR CITIZEN RESEARCH, Washington, D.C., Nov. 19, 2009.

*Wireless Innovation Luncheon*, MOBILE FUTURE, Washington, D.C., Nov. 3, 2009.

*Second Life Settlements & Longevity Summit*, INSURANCE-LINKED SECURITIES & LIFE SETTLEMENTS, New York, N.Y., Sept. 30, 2009.

*Perspectives on Investment and a National Broadband Plan*, AMERICAN CONSUMER INSTITUTE, Washington, D.C., Sept. 4, 2009.

*Markets and Regulation: How Do We Best Serve Customers?*, Wireless U. Communications Policy Seminar, UNIVERSITY OF FLORIDA PUBLIC UTILITY RESEARCH CENTER, Tampa, FL, Nov. 13, 2008.

*The Price Of Medical Technology: Are We Getting What We Pay For?* HEALTH AFFAIRS BRIEFING, Washington, D.C., Nov. 10, 2008.

*Standard Setting and Patent Pools*, LAW SEMINARS INTERNATIONAL, Arlington, VA., Oct. 3, 2008.

*The Changing Structure of the Telecommunications Industry and the New Role of Regulation*, INTERNATIONAL TELECOMMUNICATIONS SOCIETY BIENNIAL CONFERENCE, Montreal, Canada, June 26, 2008.

*The Debate Over Network Management: An Economic Perspective*, AMERICAN ENTERPRISE INSTITUTE CENTER FOR REGULATORY AND MARKET STUDIES, Washington, D.C., Apr. 2, 2008.

*Merger Policy in High-Tech Industries*, GEORGE MASON UNIVERSITY SCHOOL OF LAW, Washington, D.C., Feb. 1, 2008.

*Telecommunications Symposium*, U.S. DEPARTMENT OF JUSTICE ANTITRUST DIVISION, Washington, D.C., Nov. 29, 2007.

*Wireless Practice Luncheon*, FEDERAL COMMUNICATIONS BAR ASSOCIATION, Washington, D.C., Nov. 29, 2007.

*Association for Computing Machinery's Net Neutrality Symposium*, GEORGE WASHINGTON UNIVERSITY, Washington, D.C., Nov. 12, 2007.

*Regulators' AdvanceComm Summit*, NEW YORK LAW SCHOOL, New York, N.Y., Oct. 14, 2007.

*Annual Conference*, CAPACITY USA 2007, New York, N.Y., Jun. 26, 2007.

*William Pitt Debating Union*, UNIVERSITY OF PITTSBURGH, SCHOOL OF ARTS & SCIENCES, Pittsburgh, PA., Feb. 23, 2007.

*Annual Conference*, WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, Washington, D.C., June 27, 2006.

*Annual Conference*, MEDICAL DEVICE MANUFACTURERS ASSOCIATION, Washington, D.C., June 14, 2006.

*Annual Conference*, ASSOCIATION FOR ADVANCED LIFE UNDERWRITING, Washington, D.C., May 1, 2006.

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## **Editorials and Magazine Articles**

*The Future of Net Neutrality: What Will the Court Decide*, FOREIGN AFFAIRS, Mar. 16, 2016, co-authored with Robert Litan.

*Obama's Big Ideas for Small Saves: 'Robo' Financial Advice*, WALL STREET JOURNAL, July 21, 2015, co-authored with Robert Litan.

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*Clash of the Titans: How the Largest Commercial Websites Got That Way*, MILKEN INSTITUTE REVIEW, Second Quarter 2013, co-authored with Robert Hahn.

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*The AT&T/T-Mobile Deal: Should We Fear Wireless Consolidation?* FORBES, June 3, 2011.

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*Will the Proposed Banking Settlement Have Unintended Consequences?* HARVARD BUSINESS REVIEW, Mar. 29, 2010, co-authored with Joseph R. Mason.

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## **Memberships**

American Economics Association

American Bar Association Section of Antitrust Law

## **Reviewer**

Journal of Risk and Insurance

Journal of Competition Law and Economics

Journal of Risk Management and Insurance Review

Journal of Regulatory Economics

Managerial and Decision Economics

Telecommunications Policy

## APPENDIX 2: METHODOLOGY AND DATA

292. I relied on eight datasets to estimate the bout and identity class damages. Five of these datasets: (1) Zuffa bout compensation data; (2) Zuffa identity compensation data; (3) Zuffa contract data; (4) profit and loss data for Zuffa events; and (5) pre-acquisition Strikeforce event and compensation data—were derived from discovery documents. The other three datasets came from public sources: (6) the Fighter performance FightMetric data was purchased from the vendor directly; (7) Fighter rankings and the universe of Fighter-event matchups came from FightMatrix, and (8) the Sherdog website.

### A. Datasets

#### 1. Zuffa's Bout Compensation Data

293. Bates numbered documents ZFL-0000003, ZFL-2603701, and ZFL-2764800 are spreadsheets containing Fighter-event pairs for all Zuffa produced events from February 2001 (UFC 30) to July 2017 (UFC 214: CORMIER vs JONES). These spreadsheets, when combined, form the complete universe of all Zuffa Fighter-event pairs over that time period. In addition to event and matchup information, the data also detail the show, win, LOA, PPV, and discretionary bonus payments made to each Fighter in each event (for example, Fight of the Night, Submission of the Night, and Knockout of the Night). Not counting non-events and events with no FightMetric data (discussed below), this dataset contains 8,505 Fighter-event pairs spanning 415 events and 1,503 Fighters. The Fighter-event pairs form the basis for my regression dataset.

#### 2. Zuffa's Identity Compensation Data

294. Zuffa produced ZFL-2679053 and ZFL-2764813 at Plaintiffs' request, which are line-item accounting databases used by Zuffa to track payments, including payments to fighters; it is internally referred to as the "JD Edwards Database." I analyzed the payment data and flagged all payments relating to the identity class (sponsorship payments, video-game payments, merchandise royalties, and athlete outfitting policy payments). I supplement this data with ZFL-0000650, a "Merchandise Royalty Accrual database," which tracks royalty revenues accrued to specific Fighters for the sale of merchandise. If total royalty accruals are greater than merchandise payments in the JD Edwards Database during the Class Period, I use royalty revenues accrued from the Merchandise Royalty Accrual database instead for that Fighter's Merchandise payments during the Class Period.

#### 3. Zuffa's Contract Data

295. Zuffa produced 44,526 separate Bates-numbered documents containing 51,020 individual Fighter-related documents. These documents included Promotional and Ancillary Rights Agreements (PARs), Bout Agreements, Letters, Amendments, Ratifications, Merchandise Agreements, other miscellaneous contracts, and some non-contract documents. Many of these documents were unsigned drafts. My team of researchers reviewed all 51,020 documents in this production. They cataloged the type of the document, and, in the case of PARs, additionally catalogued the contents of these contracts. For each PAR, my team recorded the date, Fighter

name, promoter name, whether or not the document was signed by both parties, and various terms of the agreement. In addition to recording the term of the agreement in months and bouts, we also noted (where applicable) the terms of the Right to Match Period, the Exclusive Negotiation Period, the Champion's Clause, tolling periods, and any Option Periods. The researchers recorded how the language of the ancillary rights clauses, promotion clauses, exclusion clauses, Champion's clause, tolling clauses, right to match clauses, commercial identification clauses, and breach of suspension clauses changed over time. From this exercise, my team and I ultimately created a dataset containing the terms of all valid and complete PAR agreements signed by both Zuffa and the Fighter. This dataset contained 2,136 valid contracts in total, from May 2001 to November 2015.<sup>640</sup>

296. I match this contract data to the Fighter-event observations from the Zuffa compensation data by the Fighter's name and the date of the observation. I assign an active PAR to a Fighter-event observation if the observation occurs during the active contract period of the PAR. This active contract period is determined by taking the PAR signing date as the beginning date, and assigning it an end date determined by (1) the contract's term length in months (including the lead-up time from signing to a Fighter's first bout, as determined by empirical observation); and (2) the option period (if any) specified in the contract.

297. I make further allowances for early contract renewals and contract tolling. First, if a Fighter signs a new PAR while an old PAR is active, the new PAR takes precedence over the old. Second, as tolling data on contracts was not comprehensively available, I and my team take steps to match Fighter-event pairings that occur outside of any active contract. This happens in 123 observations before November 2015, the cut-off date for the contract data. If Fighter-event pairings occur with no matching PAR, and if that fight does not exceed the maximum number of bouts specified in the most recent contract, it is assumed that the PAR was extended via one of the PARs many tolling provisions. For 177 observations that occur after November 2015, we apply the Fighter's most recent contract to the observation.

298. Overall, I and my team are able to match 78 percent of Zuffa's Fighter-event pairs from the compensation data to a PAR from 2001-2015, when the contract data ends, and 71 percent overall. (Contracts signed in 2015 may still be active in 2017, but no new contracts are observed, leading to a lower share of matched pairs.) I have no reason to believe the sample of contracts provided were biased in any material way with regards to their terms relative to the true contract population.

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640. I exclude two contracts from non-Zuffa promoters, one from Invicta and one from EliteXC, that Zuffa included in the document production.

#### **4. Zuffa's Event Profit and Loss Data**

299. Zuffa provided two event-level profit-and-loss documents from which I gather event-specific revenues, costs, and compensation paid to Fighters. ZFL-2764797 details the event-level revenues and costs for all numbered (Pay-Per-View) UFC event from 2006 to 2016. ZFL-2764798 details the same revenues and costs for all events from 2010 to 2016. This second document includes Strikeforce, WEC, and non-PPV events (such as the shows on FOX, FX, and FUEL). This means that there is a data gap from 2006 to 2010 of non-PPV Zuffa events. To address this gap, I supplement this data with event-specific profit and loss documents produced in discovery.<sup>641</sup> Each of these profit-and-loss statements reports the total direct and indirect costs and revenues generated from the event. The revenues are sorted into various categories, broadly classified as Ticket Sales or Site Fees; PPV, Broadcast Sales, and Fees (including “Web Buys” and “Other”); event-specific Merchandise; and event-specific Sponsorships.

#### **5. Pre-Acquisition Strikeforce Data**

300. Within the discovery documents, I identified a number of files that contained data on Strikeforce's operations before its acquisition by Zuffa. These assorted datasets, once cleaned and combined, provide a partially complete picture of Strikeforce's event revenues and Fighter compensation before its acquisition. These documents are SJS00084771, ZFL-2458186, and ZFL-1472338. These sources add complete 400 Fighter-event level observations to the regression dataset. I omit “Young Guns” Strikeforce events from my analysis, as these were amateur events with purses less than \$1,000.

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641. EG: ZUF-00031995, ZUF-00034210, ZUF-00106849, ZUF-00106856, and ZUF-00106854.

## 6. FightMetric Fighter Performance Data

301. To control for a Fighter's characteristics at the time of a fight, I procured detailed statistics on a Fighter's bout performance from FightMetric. This sports statistics firm, the "official statistics provider of the UFC,"<sup>642</sup> generates Fighter-bout level information such as the number of strikes attempted or landed, where they hit and the degree of power, the time spent in the various MMA positions (stalking, clinch, ground control), and other relevant metrics. These data are matched onto the bout compensation data by Fighter name and event.

302. The FightMetric data contains fight data for a select number of MMA firms. These include Affliction, Bellator, EliteXC, Pride Fighting Championships, Strikeforce, World Extreme Cagefighting, and the UFC. FightMetric founder and director Rami Genauer explained over email FightMetric's selection criteria for promoters:

It was basically an attempt to cover the...most prominent organizations in the world. That was UFC and PRIDE, then WEC, then Strikeforce. In recent years, it's become whoever the market is willing to pay for. That's meant covering Bellator at times, but not currently. There are also instances in the database of following a fighter's career, regardless of organization. That was more important in the early days of the company when the stars were what mattered. Now it's the UFC brand that matters the most.<sup>643</sup>

## 7. FightMatrix Data

303. FightMatrix is an independent MMA ranking website that uses "a computerized rating system that attempts to capture un-biased "popular thought" and combine it with prediction-based analysis."<sup>644</sup> Zuffa personnel relied on FightMatrix statistics during depositions.<sup>645</sup> I pulled FightMatrix's historical rankings for all time periods and divisions, assembling a database showing all of the site's rankings in three-month intervals since 1990, ending in January 2017. FightMatrix tracks rankings by weight class, with different maximum ranks tracked. For example, the Men's Heavyweight division tracks Fighters up to the 250<sup>th</sup> best Fighter, whereas the Men's Welterweight division tracks Fighters up to the 650<sup>th</sup> best Fighter.<sup>646</sup>

## 8. Sherdog Data

304. Sherdog.com is a major MMA news and fan site, cited by industry analysts as "the most popular source of MMA news and information."<sup>647</sup> In addition to its news services, Sherdog

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642. See <http://www.fightmetric.com/company>. Note that UFC displays the FightMetric statistics on their website, and a branded "Statistics Provided by FightMetric" logo appears on pages such as <http://www.ufc.com/fighter/Ronda-Rousey>

643. E-mail from Remi Genauer, Director, FightMetric, to Augustus Urschel, Analyst, Economists Incorporated (November 19, 2016, 19:48 ET).

644. See <http://www.fightmatrix.com/faq/>

645. Deposition of Javier Vasquez, Feb. 14, 2017 at 67, Exhibits 42-44.

646. See <http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=109&Division=4> and <http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=109&Division=1>

647. ZFL-2463304 at 14.

maintains a nearly complete record of every MMA fight from around the world, from UFC mega events in Las Vegas to eight-man untelevised garage fights in Bosnia and Herzegovina.<sup>648</sup> These records give the dates and locations of the fights, who fought in them, and the outcome of the individual bouts. I obtained the entire catalog of fights and events from Sherdog's public website and assembled a dataset of every MMA fight from around the world. The dataset contains 280,471 worldwide bouts of two Fighters from 36,864 unique Live MMA Events spanning from December 1991 to June 2017.

305. In addition to event and bout data, the website assigns a unique Fighter ID to each MMA combatant in the known MMA universe. For example, the number "2383" in the URL [www.sherdog.com/fighter/Nate-Quarry-2383](http://www.sherdog.com/fighter/Nate-Quarry-2383) corresponds to Nate Quarry and no other Fighter, which can be tested by typing in <http://www.sherdog.com/fighter/2383>. Because names can vary across different datasets (and, in the case of some Zuffa data, within a dataset), I use this unique Fighter ID to link Fighters across the various datasets described here.

## B. Foreclosure Share Methodology

306. Zuffa's foreclosure share of the market is defined as the percentage of foreclosed Zuffa Fighters over the total population pool of the Relevant Input Market in a given month at time  $t$ , illustrated below. I calculate one measure of foreclosure under which all Fighters are considered foreclosed; in the alternative, I classify a Fighter as foreclosed only if the duration of exclusivity for their contract is 30 months or more. The foreclosure statistic can be written:

$$\left( \frac{\text{Foreclosed Zuffa Fighter}}{\text{Relevant Input Market Fighter Pool}} \right)_t$$

307. Due to missing contracts for some Zuffa Fighters, I construct this statistic by multiplying Zuffa's internal foreclosure share by Zuffa's market share of the Relevant Input Market Fighter Pool at time  $t$ . For example, Zuffa may have 150 Fighters in a pool of 200 total Fighters in the Relevant Input Market at time  $t$ , but contract data is only available for 120 of those 150 Zuffa Fighters. In this case, I would take the internal foreclosure share of the Zuffa Fighters for which we have contract data. If 96 of those 120 Fighters were foreclosed, Zuffa would have an internal foreclosure share of 80 percent. I would then multiply that 80 percent by Zuffa's market share at time  $t$ , in this case 75 percent (equal to 150 Zuffa Fighters divided by 200 total Fighters in the Relevant Input Market Fighter Pool) for a total foreclosure share of 60 percent.

308. The Relevant Input Market Fighter Pool consists of all Fighters in the Relevant Input Market at a Live MMA Event occurring at time  $t$ . I consider a Fighter to be in the Relevant Input Market Fighter Pool if he or she participated in a Live MMA Event within nine or twelve months before or after the Live MMA Event in question. This allows me to capture the pool of Fighters that were active around the time of a Live MMA Event, and thus potentially could have participated in it (even if they actually participated in some other Live MMA Event within the window). I consider a nine-month window as my baseline specification. By definition, Fighters not

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648. See <http://www.sherdog.com/events> and <http://www.sherdog.com/organizations/Mix-Fight-Night-Bosnia-and-Herzegovina-11979>

fighting in events during this window were inactive (did not fight in any Live MMA Event) for a period of 18 months surrounding the event in question. (My analysis of data from Sherdog reveals that the median career length for an MMA Fighter is brief—approximately five bouts, spread over just 41 months, which means that the typical length of time between bouts for a Fighter is about 8 months).

309. In some specifications, Fighters are weighted by the average gate and PPV revenues per Fighter for their respective promoters. Using the MMA news source <http://mmapayout.com>, I construct a database of 254 Live MMA Events and their total revenues.<sup>649</sup> This includes event revenues for the promoters Affliction, Bellator, EliteXC, Pride, Strikeforce, UFC, WEC, and WSOF. I match these event revenues into the Sherdog data of all of the Fighter bouts that took place in that event. I then take the average revenue generated by each Fighter by dividing the total revenue by the number of Fighters. One average is calculated for Zuffa, and another for non-Zuffa promoters. Zuffa Fighters are then weighted by Zuffa's average revenue per Fighter, while non-Zuffa Fighters receive the average revenue per Fighter for non-Zuffa promoters. This approach is conservative because revenue data are available only for (relatively) large non-Zuffa MMA promotions such as Bellator and Strikeforce, so that Fighters from smaller promotions (which lack such data) receive the same weight as if they were affiliated with a larger promotion. In the case of ONE Championship, I conservatively assigned Fighters a weight equal to 25 percent of Zuffa Fighters' weight, in light of evidence that ONE's valuation was reportedly "approaching" a valuation of \$1B at approximately the same point in time that Zuffa sold for \$4B.<sup>650</sup>

### C. Bout Class Regression Dataset Methodology

310. Given the various datasets described above, I create a combined regression dataset at the Fighter-event observation level. Each observation is a Zuffa (or Strikeforce pre-acquisition) Fighter in a given event matchup. Each observation contains the Fighter's name, their opponent, the event and its details, the Fighter's compensation and bonuses (from the Compensation Data), the events revenues and costs (from Zuffa's Event Profit and Loss Data), the Fighter's performance in that event (from the FightMetric data), the market foreclosure shares in that month (see section B above), the PAR agreement terms a Fighter was subject to at the time of the event (from the Contract Data). Combined, these datasets provide the independent and dependent variables necessary to estimate the regression.

311. With the exception of the contract, FightMatrix, and foreclosure share data, all of these datasets were merged in by Fighter IDs, a generated event ID, and the event date. Because the PAR agreements span multiple fights over time, I generate a timeframe over which each PAR agreement is active. This is the signing date plus the combined effective term. Because this is a theoretical date range, in the case of any overlapping agreements, I take the most recently signed

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649. I use <http://mmapayout.com/blue-book/pay-per-view/> for PPV revenues and <http://mmapayout.com/blue-book/live-gate-attendance/> for gate revenues. Note: Although Strikeforce and Bellator have both produced internal financial data, I used publicly available data to construct Fighter weights to ensure event-specific comparability across promoters.

650. James Goyder, "ONE Championship receives multimillion dollar investment from Singapore fund," MMA Mania (July 14, 2016) ("[T]he company is on course for a billion-dollar valuation...The UFC was sold for \$4 billion to a group led by WME-IMG and ONE Championship is on course for an IPO in the next 12 to 18 months.").

contract. The foreclosure share data and FightMatrix ranking data were merged in on matching months.

**APPENDIX 3: MATERIALS RELIED UPON**

Deposition of Denitza Batchvarova (January 25, 2017)

Deposition of Ike Lawrence Epstein (December 12, 2016)

Deposition of Jon Fitch (February 15, 2017)

Deposition of Kirk Hendrick (November 30, 2016)

Deposition of Kyle Kingsbury (February 17, 2017)

Deposition of Jeremy Lappen (February 28, 2017)

Deposition of Michael Mersch (July 14, 2017)

Deposition of Michael Mossholder (December 1, 2016)

Deposition of Kurt Otto (February 6, 2017)

Deposition of Sean Shelby (April 12, 2017)

Deposition of Javier Vasquez (February 14, 2017)

Deposition of Brandon Vera (February 6, 2017)

Deposition of Marshall Zelaznik (February 8, 2017)

Deposition of Lorenzo Fertitta (March 23, 2017)

Deposition of Jeffrey Aronson (April 25, 2017)

Deposition of Dana White (August 9, 2017)

Deposition of Joseph Silva (June 7, 2017)

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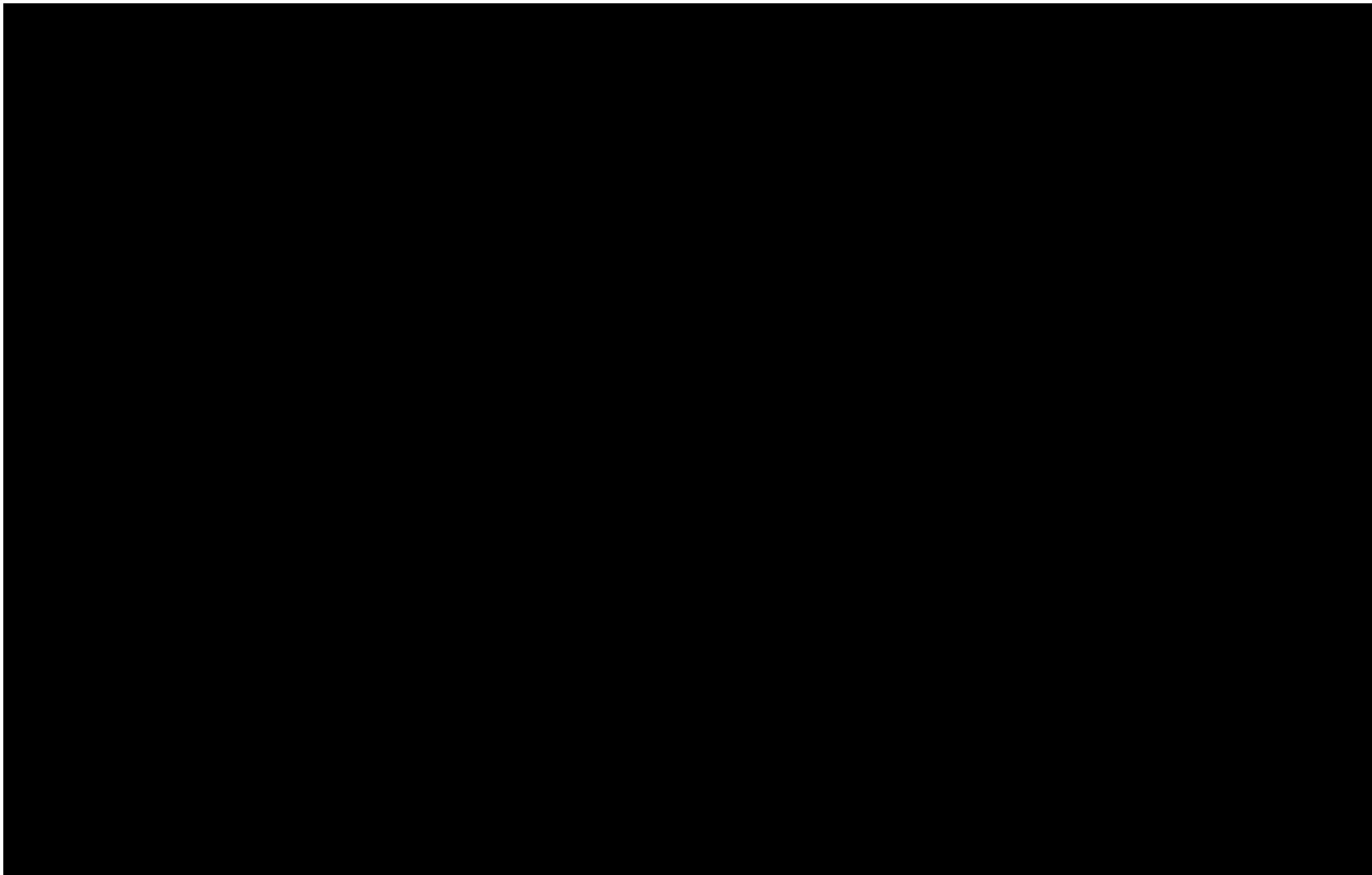
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UFC - Hal Singer Report - Errata







UFC - Hal Singer Report – Errata II







